SE LABS

Dolch.

advanced logic analysis

Service Manual

Schematics 64300S

Publ. No. 3 6431-02/A
June 1984

4850A SAME

MP MASTER
MA35386

Service Manual

Schematics 64300S

Publ. No. 3 6431-02/A
June 1984

64300 S SERVICE MANUAL INDEX

ALP 44															ORG. FORMAT				MAN	
5 9000-01	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC					X													1		1
ASSY DRWG					X													2		2
PINOUTS																				
BLOCKDIAGRAMM																				

ALP 44 D															ORG. FORMAT				MAN	
5 9022-04	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC			X															1		1
ASSY DRWG			X															2		2
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

64300 S SERVICE MANUAL INDEX

ECL-COMPARATOR															ORG. FORMAT				MAN	
U 11079-01	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC	X																	1		1
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

64300 S SERVICE MANUAL INDEX

KEYBOARD															ORG. FORMAT				MAN	
5 6430-01	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC		X															1			1
ASSY DRWG		X															1	2		3
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

CPU BOARD															ORG. FORMAT				MAN	
5 6431-01	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC				X													4			4
ASSY DRWG				X													1	2		3
PINOUTS																		2		2
BLOCKDIAGRAMM																				

MOTHERBOARD 1															ORG. FORMAT				MAN	
5 6431-02	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC						X									2				2	
ASSY DRWG						X											1	2		3
PINOUTS																				
BLOCKDIAGRAMM																				

MOTHERBOARD 2															ORG. FORMAT				MAN	
5 6431-03	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG	X																	2		2
PINOUTS																				
BLOCKDIAGRAMM																				

CMOS 1 PAK															ORG. FORMAT				MAN	
5 6431-05	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC	X																2	1		3
ASSY DRWG	X																	2		2
PINOUTS																				
BLOCKDIAGRAMM																				

64300 S SERVICE MANUAL INDEX

INPUT BOARD														ORG. FORMAT				MAN	
5 4851-01	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC								X								1		1		2
ASSY DRWG								X										5		5
PINOUTS																		1		1
BLOCKDIAGRAMM																				

TIME BASE															ORG. FORMAT				MAN	
5 4851-02	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC									X						1		1		1	1
ASSY DRWG									X									3		3
PINOUTS																		1		1
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

CHARACTER BOARD															ORG. FORMAT				MAN	
5 4851-07	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC					X										1		1		1	1
ASSY DRWG					X													3		3
PINOUTS																		1		1
BLOCKDIAGRAMM																				

COUNTER BOARD															ORG. FORMAT				MAN	
5 4851-08	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC													X			1	1			2
ASSY DRWG													X					3		3
PINOUTS																		1		1
BLOCKDIAGRAMM																				

CONTROL BOARD															ORG. FORMAT				AN	
5 4851-09	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC							X									2	1			3
ASSY DRWG							X											2		2
PINOUTS																		1		1
BLOCKDIAGRAMM																				

64300 S SERVICE MANUAL INDEX

SBLA															ORG. FORMAT				MAN	
5 4850-06 A4	A	B	C	D	E	F	G	H	I	J	K	L	M	O	A1	A2	A3	A4	A3	A4
SCHEMATIC														X		1	1			2
ASSY DRWG														X				2		2
PINOUTS																		1		1
BLOCKDIAGRAMM																	1			1

GPIB/THRESHOLD BOARD															ORG. FORMAT				MAN	
5 4850-08 A4	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC												X					3			3
ASSY DRWG												X						3		3
PINOUTS																		2		2
BLOCKDIAGRAMM																				

TRIGGER BOARD															ORG. FORMAT				MAN	
5 4850 10 A2	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC													X			2	1			3
ASSY DRWG													X					2		2
PINOUTS																		1		
BLOCKDIAGRAMM																	1			1

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

															ORG. FORMAT				MAN	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	A1	A2	A3	A4	A3	A4
SCHEMATIC																				
ASSY DRWG																				
PINOUTS																				
BLOCKDIAGRAMM																				

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
1	5 9000-01	PC Board Rev.: E	
4		HYBRID U11079-01	U1 ... U4
2		Tantal 10µF/16V	C1, C3
1		Cap. 22nF	C2
1		Res. 200Ω	R1
1		Stiftleiste 5p. gew. (2RH)	J1
1		DIP 14p.	J2
		Cable 14p.	
1		Pfostenverbinder 14p.	
1		Gehäuse	

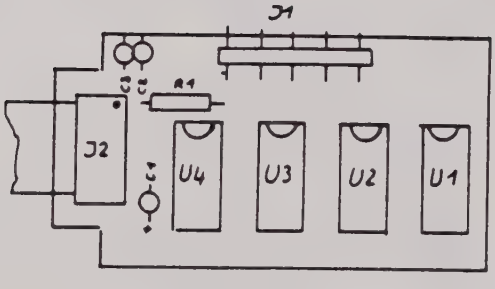
E	CODE	ERN	DATE	REVISIONS	DATE	NAME	CHECK
							DRAWN

DOLCH
LOGIC INSTRUMENTS

PART LIST
ALP 44

PART NUMBER: 5 9000-01

SHEET



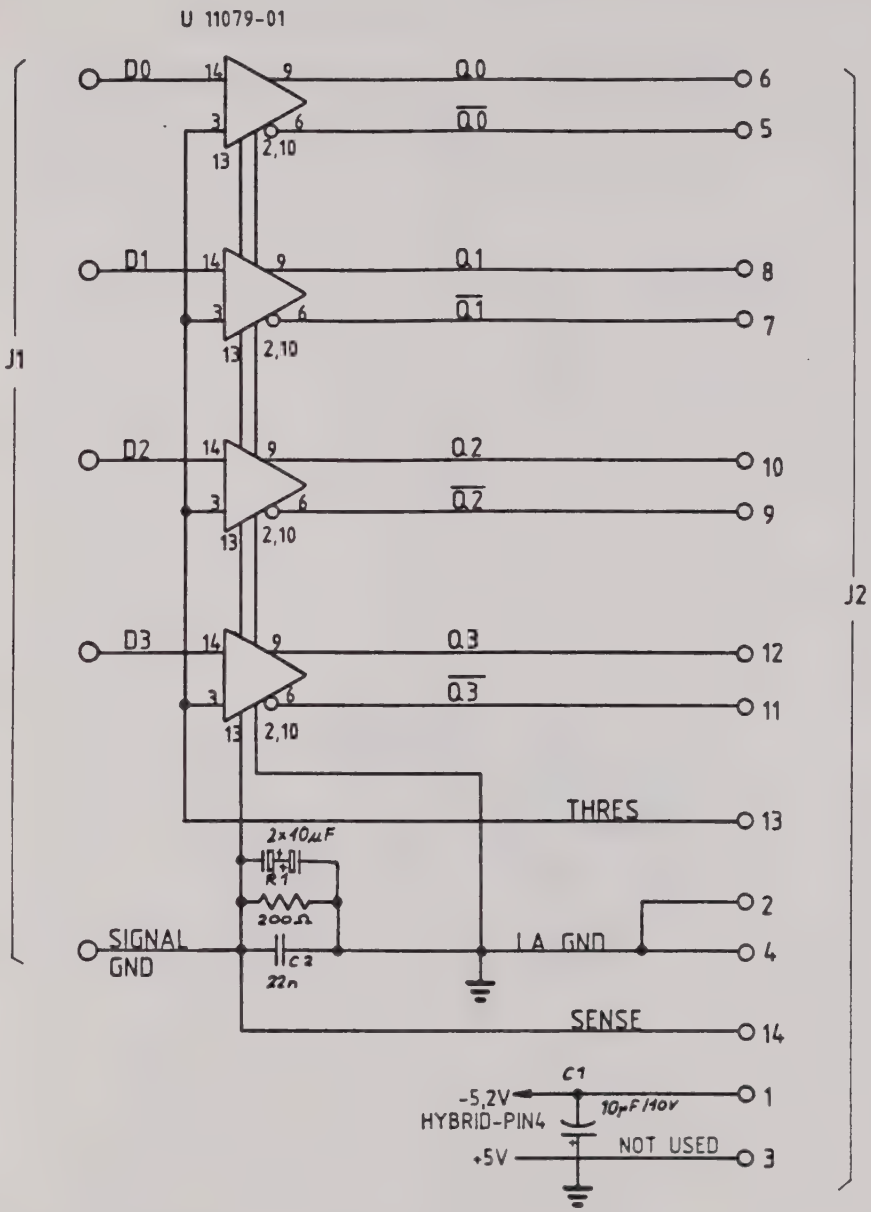
DOLCH
LOGIC INSTRUMENTS

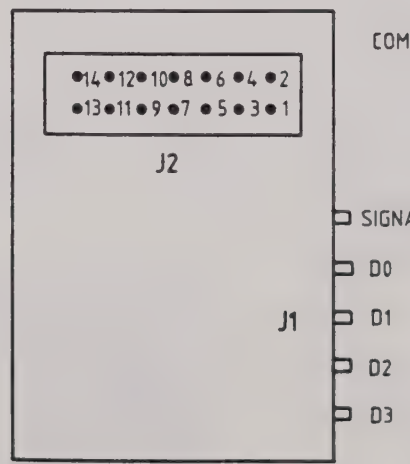
ALP 44

PART NUMBER
5 9000-01

SHEET

	CODE	SIGN	DATE	REVISIONS	DATE	NAME





E	130	8.10.81					DOLCH LOGIC INSTRUMENTS
D		3.9.81					
B		20.3.81	DATE	NAME			
CODE	REVISIONS		ERN	DATE	CHECK	DRAWN 20.3.81	ALP 44 BOARD
							PART NUMBER: 5 9000-01
							SHEET: 1/1

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
1		Gehäuse Alp 44	
		Aufdruck Alp 44 D	
1	59022 - 04	Leiterplatte Rev. A	
1		Stiftleiste 5 pol.	J1
		abgew. doppelraster	
1		Beschriftungswinkel	
2		75 107	u2, u3
1		10 124	u4
1		741	u1
2		IC - Sockel 14 pol	
1		IC - Sockel 16 pol	
1		IC - Sockel 8 pol	
1		Widerst. 49k9 1%	R3
4		Widerst. 39K 1%	R8, R9, R10, R11
5		Widerst. 10K 1%	R2, R4, R5, R6, R7
1		Widerst. 8K2	R1
1		SIL 680 5p.	R12
1		Widerst. 499K 1%	R13
7		Vielschicht Kond. 22nF	C3, C4, C5, C6, C11, C14, C15
4		Kond. 1pF	C7, C8, C9, C10
3		Tantal-Kond 10µF 10V	C12, C13, C16
1		Vielschicht Kond. 100nF	C2
1		Abschlußkabel wie Alp 44	

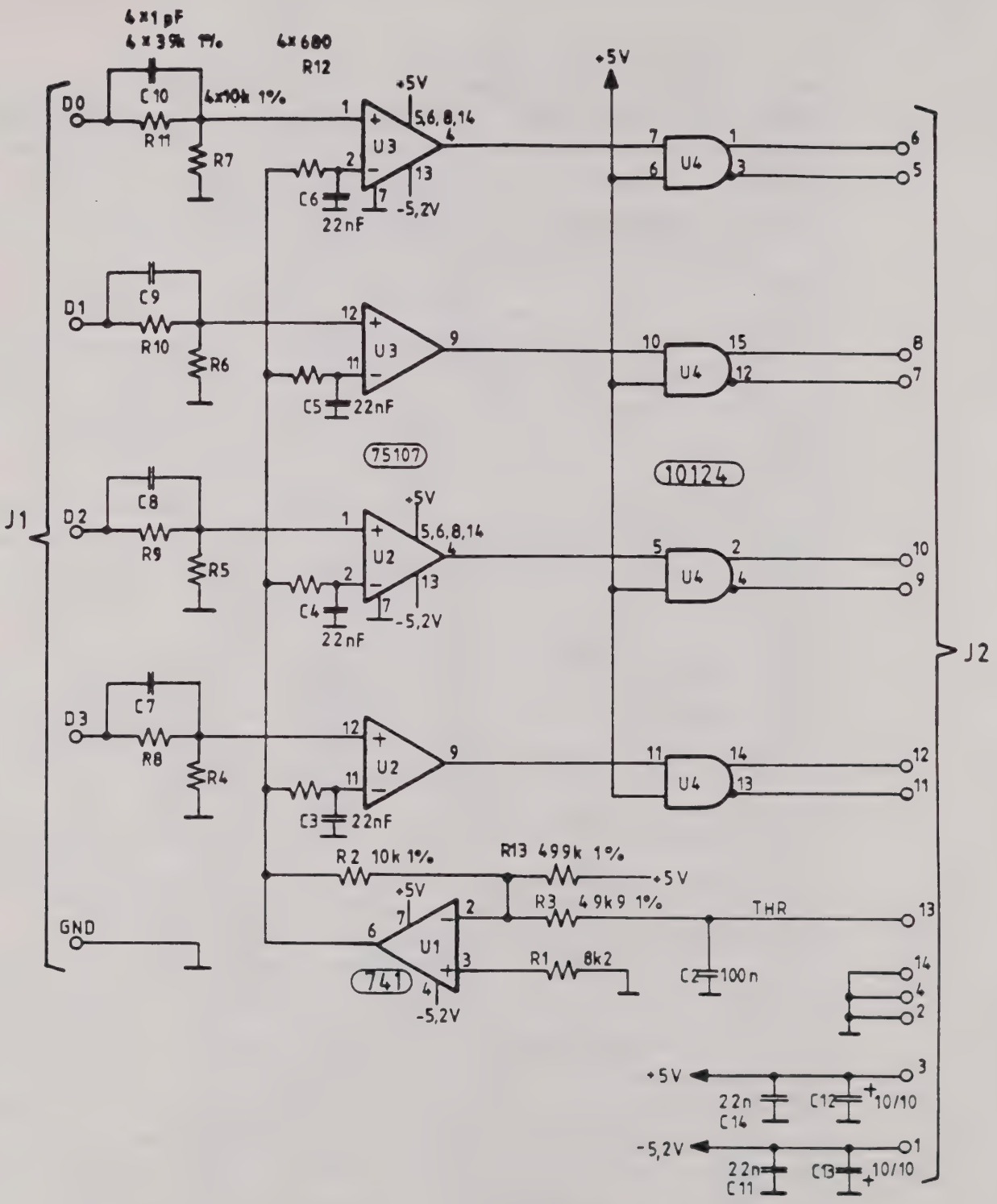
C	202.PV	25.1.84	DATE	NAME	Tukrey
B	443	EAN	REVISIONS	DATE	6.2.84
CODE				CHECK	
				DRAWN	

DOLCH LOGIC INSTRUMENTS

PART LIST

ALP 44 D

PART NUMBER	SHEET
59022 - 04	



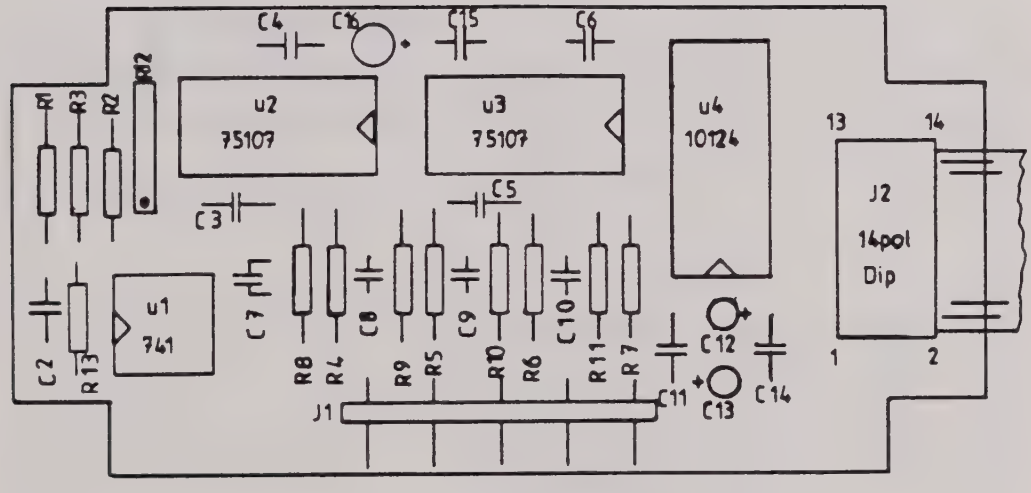
DOLCH LOGIC INSTRUMENTS

ALP44D

PART NUMBER: B 2022-04

SHEET: 1 / 1

gedruckt auf [illegible] Wolfgang Walter Darmstadt PGH 1302



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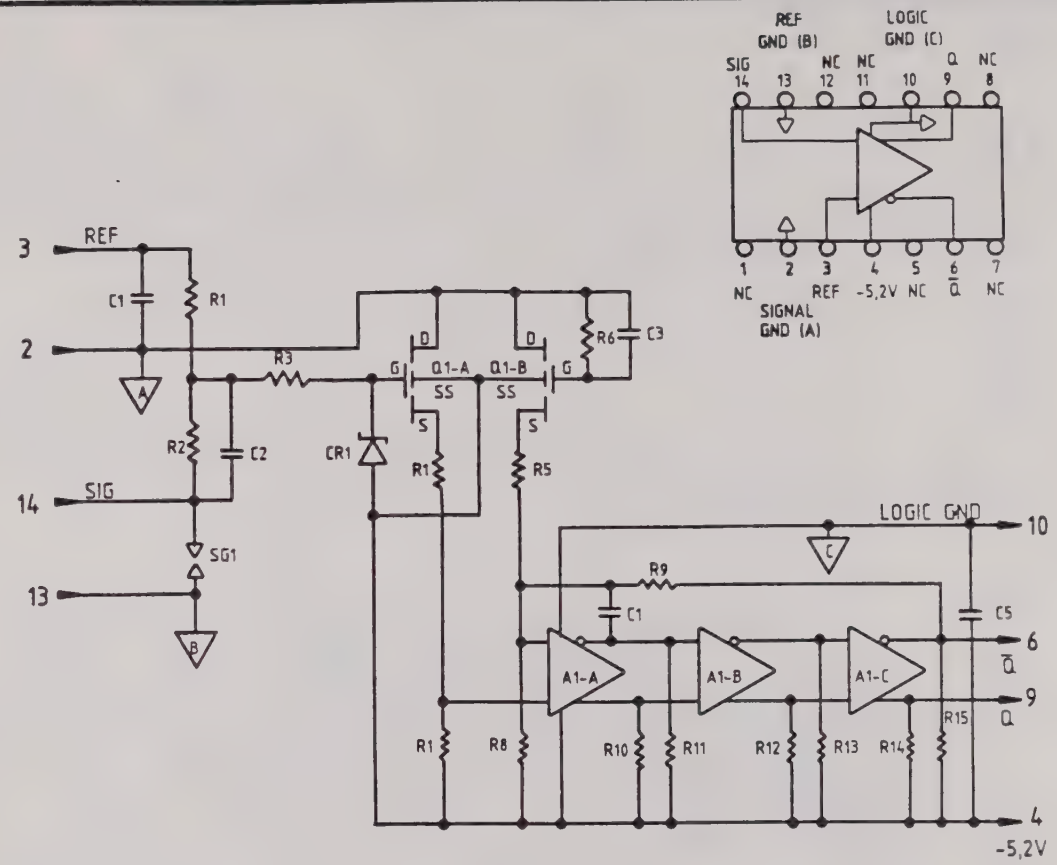
	25184				
	5.89	ERN	DATE	ALP 44 D	
	B	REVISIONS	6.285		
	C	CHECK	TECHN.	PART NUMBER	SHEET
		DRAWN		59022 - 04	



R1,2	500K	1% P.T.
R3,4,5	100	
R6	250K	2%
	470	5%
R9	4K	4-4.5K SELECT FOR 20mV HYSTERESIS R1,8-1K
C1	100pF	
C2	4pF	SELECT 3.9-4.7
C3,C5	.01uF	
C4	2.7pF	
CR1	HP5082-0024	
Q1	SPI 5001G	SELECTED DMOS
A		MCL10206-2 ECL
CASE		DIC TOOL CO. MEADEVILLE PA D1-14-01
SG-1	100	

							DOLCH LOGIC INSTRUMENTS
		20.3.81	DATE		NAME	AC	
		ERN		REVISIONS	DATE	20.3.81	INPUT COMPARATOR, HYBRID
	A	CODE			CHECK	DRAWN	PART NUMBER: U 11079-01 — SHEET: 1/1

Pos.	Qty.	Description	DLI Part No.	Designation
1	1	SN9445		U1
2	1	SN74LS32		U2
3	1	SN74LS367		U3
4	5	Widerstand 1kΩ		R1 - R5
5	1	Kond. 10µF 35V Tantal		C1
6	3	Kond. 22nF Vielschicht		C2, C3, C4
7	1	Leiterplatte	5 64300-01 REV A	
8	6	Tasten Komplett	SK01 DG 06	dunkel grau
9	5	Tasten komplett	SK01 GR 06	grau
10	1	" "	SK01 01 06	sw weißbedruckt
11	1	" "	SK01 02 06	" " "
12	1	" "	SK01 03 06	" " "
13	1	" "	SK01 04 06	" " "
14	1	" "	SK01 05 06	" " "
15	1	" "	SK01 06 06	" " "
16	1	" "	SK01 07 06	" " "
17	1	" "	SK01 08 06	" " "
18	1	" "	SK01 09 06	" " "
19	1	" "	SK01 00 06	" " "
20	1	" "	SK01 0A 06	" " "
21	1	" "	SK01 0B 06	" " "
22	1	" "	SK01 0C 06	" " "
23	1	" "	SK01 0D 06	" " "
24	1	" "	SK01 0E 06	" " "
25	1	" "	SK01 0F 06	" " "

DOLCH LOGIC INSTRUMENTS

Part List
KEY-BOARD

PART NUMBER 5 64 30 -01

SHEET 1/2

Pos.	Qty.	Description	DLI Part No.	Designation
26	1	Tasten komplett	Sk01 0X 06	SW weiß betruckt
27	1	Taste komplett	Sk01 [] 06	" " "
28	2	Tasten komplett	Sk01 LA 06	← weiß betruckt
29	2	" "	Sk01 RA 06	→ " "
30	1	Taste komplett	Sk01 UA 06	↑ " "
31	1	" "	Sk01 DA 06	↓ " "
32	1	" "	Sk01 HO 06	Home* " "
33	1	" "	Sk01 RU 06	RUN* " "
34	1	" "	Sk01 SP 06	Stop* " "
35	1	" "	Sk01 MO 06	Mon* " "
36	1	" "	Sk01 ET 06	ENT* " "
				* Layout
37	1	IC Präzisionssockel 16p		

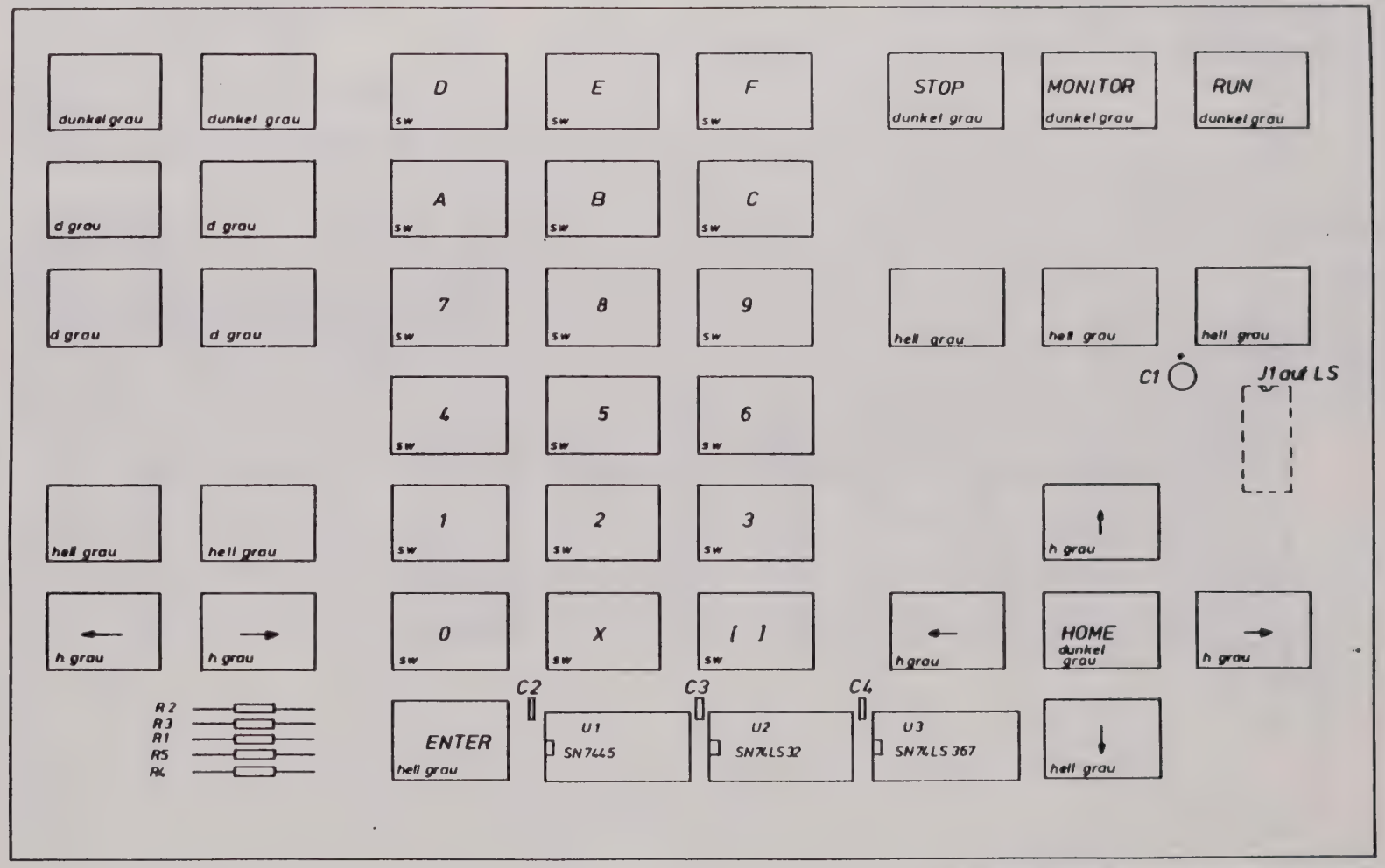
DOLCH LOGIC INSTRUMENTS

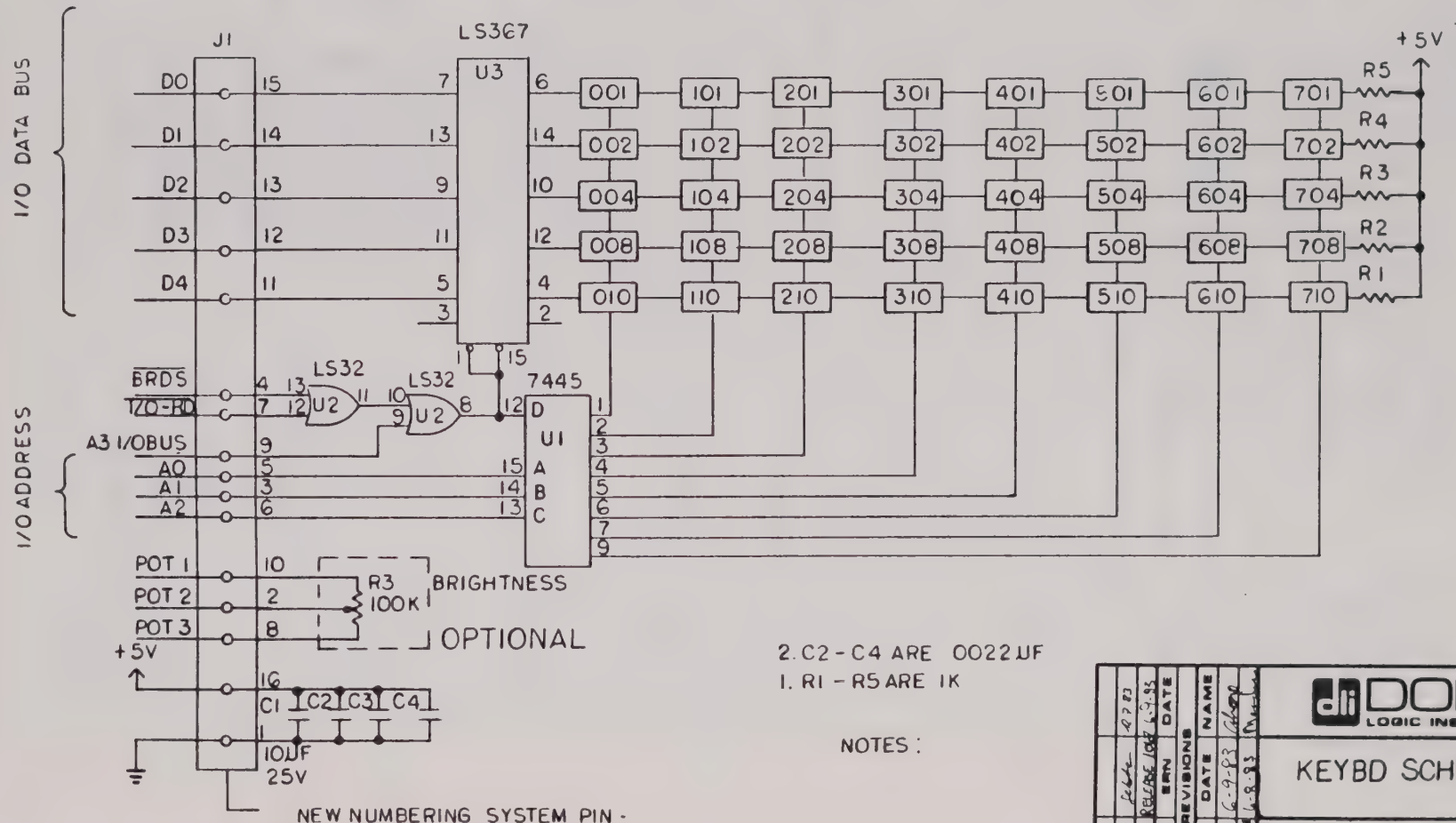
Part List

KEY-BOARD

PART NUMBER 5 6430 -01

SHEET 3/3


dunkel grau
dunkel grau
D
sw
E
sw
F
sw
STOP
dunkel grau
MONITOR
dunkel grau
RUN
dunkel grau
d grau
d grau
A
sw
B
sw
C
sw
d grau
d grau
7
sw
8
sw
9
sw
hell grau
hell grau
hell grau
C1
J1 auf LS
4
sw
5
sw
6
sw
hell grau
hell grau
1
sw
2
sw
3
sw
h grau
h grau
h grau
0
sw
X
sw
[ ]
sw
h grau
HOME
dunkel grau
h grau
R2
R3
R1
R5
R4
C2
C3
C4
ENTER
hell grau
U1
SN7445
U2
SN74LS32
U3
SN74LS367
hell grau


I/O DATA BUS
I/O ADDRESS
J1
LS367
U3
D0
D1
D2
D3
D4
+5V
R5
R4
R3
R2
R1
001 101 201 301 401 501 601 701
002 102 202 302 402 502 602 702
004 104 204 304 404 504 604 704
008 108 208 308 408 508 608 708
010 110 210 310 410 510 610 710
BRDS
I/O-RD
LS32
U2
LS32
U2
7445
U1
A3 I/OBUS
A0
A1
A2
POT 1
POT 2
POT 3
+5V
R3
100K
BRIGHTNESS
OPTIONAL
C1
C2
C3
C4
10UF
25V
NEW NUMBERING SYSTEM PIN-NUMBERS ARE EQUAL TO FLAT RIBBON WIRE NUMBERS.
2. C2-C4 ARE .0022UF
1. R1-R5 ARE 1K
NOTES:
DOLCH
LOGIC INSTRUMENTS
KEYBD SCHEMATIC
PART NUMBER
5 6430 -01 SCH
SHEET
1/1
REVISIONS
CODE
ECN
DATE
NAME
DRAWN
CHECK

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
3		74LS00	A19, F2, G13
1		74LS02	G8
1		74S08	A14
1		74LS10	G12
3		74LS14	A16, G1, G10
1		74LS32	G2
2		74S32	A13, A15
2		74LS74	D2, F1
1		74S74	G9
1		HC74 *	F2
1		74LS123	G11
5		74LS138	B12, B13, B14, B15, B16
1		74LS139	G14
2		74S158	A11, A12
5		74LS244	G6, G5, G4, E3, D5
4		74LS245	A9, A10, D15, G3
2		74LS348	A17, A18
1		74LS365	B10
2		74LS373	G15, F12
1		74LS174	B9
1		MC1488	D1
1		MC1489	E1
1		2732 800nS.	D6
5		2764 300nS.	D7, D8, D9, D10, F3
16		4164/8264 200nS.	A1, ..., A8, B1, ... B8
2		7611 - 5	B11, G7
1		Z80 CPU	D4
1		Z80 PIO	D3
18		IC - Sockel 14 Pol.	
31		IC - Sockel 16 Pol	
11		IC - Sockel 24 Pol.	
11		IC - Sockel 20 Pol	

* wenn F2 ≙ HC04 ⇒ C = 4,7pF von Pin 6 → GND

CODE	ERN	DATE	NAME
D	457	9.2.84	
C	429	10.11.83	
B	114	25.4.83	
A		22.11.82	
REVISIONS			
CHECK			
DRAWN		29.MAR.82	

DOLCH LOGIC INSTRUMENTS

PART LIST

CPU

PART NUMBER 5 6431-01

SHEET 1/2

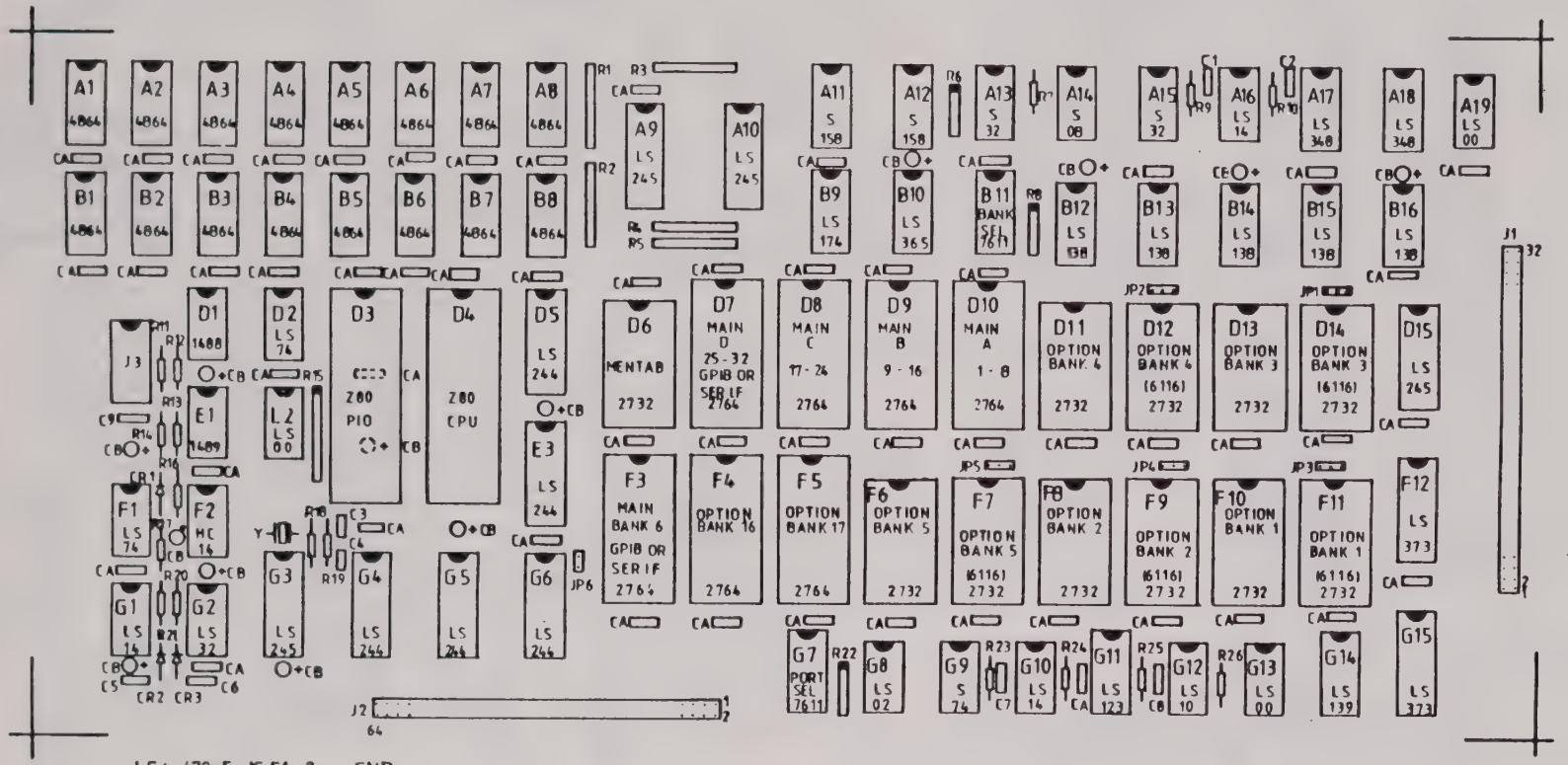
QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
7		IC-Sockel 28 Pol.	
1		Prazisionssockel 16 Pol.	J3
2		Prazisionssockel 40 Pol.	
5		4 x 22 Ω 8 Pol.	R1, R2, R3, R4, R5
3		4 x 1KΩ 5 Pol.	R6, R8, R22
1		8 x 10 KΩ 9 Pol.	R15
1		22Ω	R7
1		220Ω	R23
1		100Ω	R19
6		1KΩ	R9, R10, R13, R14, R20, R21
1		2,2KΩ	R26
2		4K7Ω	R17, R25
3		10KΩ	R11, R12, R18
2		47KΩ	R16, R24
1		470pF	C9
1		22pF	C3
3		47pF	C5, C6, C7
2		100pF	C1, C2
1		1nF	C4
1		2,2nF	C8
56		100nF	CA
13		10µF 25V	CB
3		1N4148	CR1, CR2, CR3
1	5 6431-01	Platine	
1		2,5 MHz	Y
6		Jumper	
1		Stiftleiste (gerade) 2 Pol.	JP6
5		Stiftleiste (gerade) 3 Pol.	JP1, JP2, JP3, JP4, JP5
1		Stiftleiste (gerade) 64 Pol.	J2
1		VG-Leiste (gew., weib) 64 Pol.	J1

REVISIONS						
CODE	ERN	DATE	NAME			
A	422	29.11.83				
B	423	11.12.83				
C	429	11.1.84				
D	457	31.1.84				
			DATE			
			CHECK			
			DRAWN			

DOLCH LOGIC INSTRUMENTS

PART LIST
CPU

PART NUMBER	SHEET
5 6431-01	2/2



LS: 470pF IC E1-2 → GND

CODE	ERN	DATE	NAME
D	425	9.2.84	
C	423	13.12.83	
B	422	29.11.83	
A		22.11.83	
DRAWN		22.11.83	BERGER
CHECK			

REVISIONS

DOLCH LOGIC INSTRUMENTS

CPU

PART NUMBER	SHEET
5 6431-01	1 / 1

J1

A		B
GND	1	GND
GND	2	GND
BA 11	3	BA 12
$\overline{\text{BA 12}}$	4	BCS 8
	5	BA 8
BA 9	6	BA 10
BA 0	7	BA 1
BA 2	8	BA 3
BA 4	9	BA 5
BA 6	10	BA 7
ECS 1	11	ECS 0
	12	$\overline{\text{WR}}$
CHIEE	13	$\overline{\text{WPLEN}}$
	14	
ECS 7	15	ECS 6
	16	
	17	
$\overline{\text{WP}}$	18	$\overline{\text{IN5}}$
BBD 3	19	BBD 2
BBD 1	20	BBD 0
BD 7	21	BD 6
BBD 4	22	BD 5
ECS 4	23	
WEN	24	$\overline{\text{EEPOE}}$
WA 4	25	ECS 5
WA 2	26	WA 3
WA 0	27	WA 1
WA 6	28	WA 5
WA 10	29	WA 7
WA 8	30	WA 9
+5V	31	+5V
+5V	32	+5V

J2

A		B
+5V	1	2 +5V
+5V	3	4 +5V
	5	6
	7	8 $\overline{\text{MAN RES}}$
	9	10
RDA	11	12
	13	14
	15	16 GPIB INT
	17	18
	19	20
TDA	21	22
	23	24
$\overline{\text{I/O REQ}}$	25	26
-12V	27	28 -12V
-12V	29	30 -12V
+12V	31	32 +12V
+12V	33	34 +12V
$\overline{\text{MRK LD}}$	35	36 $\overline{\text{C ACKN}}$
$\overline{\text{CRDY}}$	37	38 $\overline{\text{CHAR RD}}$
$\overline{\text{ACKN}}$	39	40 $\overline{\text{I/O WR}}$
$\overline{\text{DATA RDY}}$	41	42 $\overline{\text{I/O RD}}$
OA1	43	44 OAØ
OA3	45	46 OA2
OA5	47	48 OA4
OA7	49	50 OA6
OD7	51	52 OD6
OD5	53	54 OD4
OD3	55	56 OD2
OD1	57	58 ODØ
	59	60
GND	61	62 GND
GND	63	64 GND

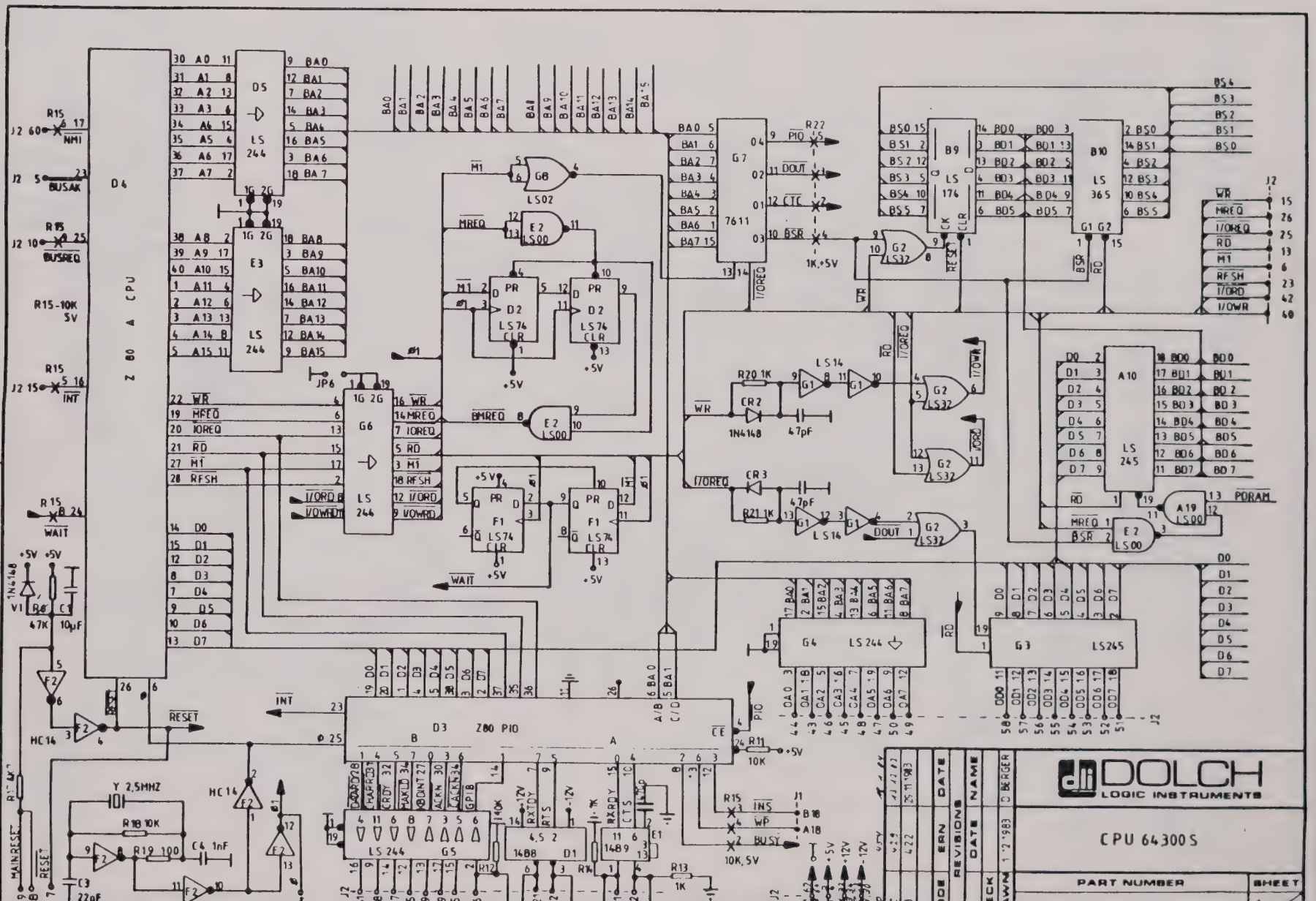
CODE	ERN	DATE
REVISIONS		
	DATE	NAME
CHECK		
DRAWN		

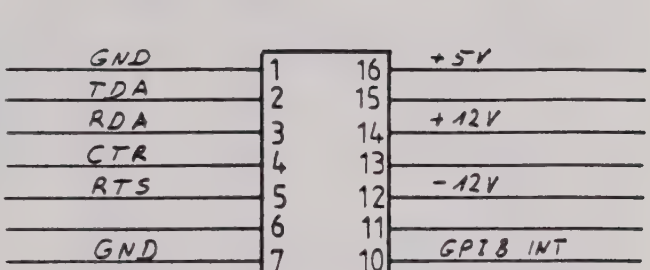
DOLCH LOGIC INSTRUMENTS

PIN OUT
CPU BOARD

PART NUMBER: 5-6431-01

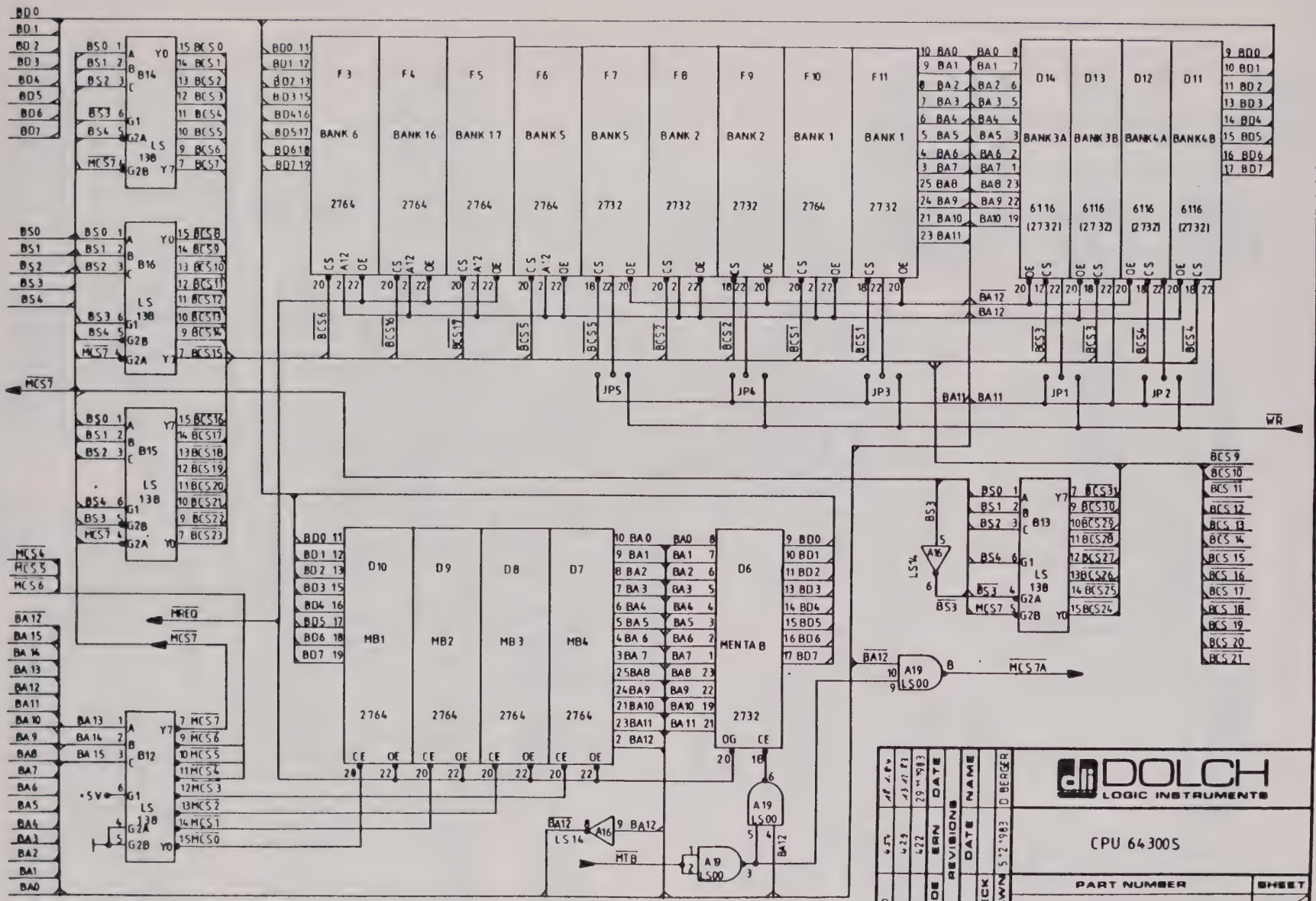
SHEET: 1/2

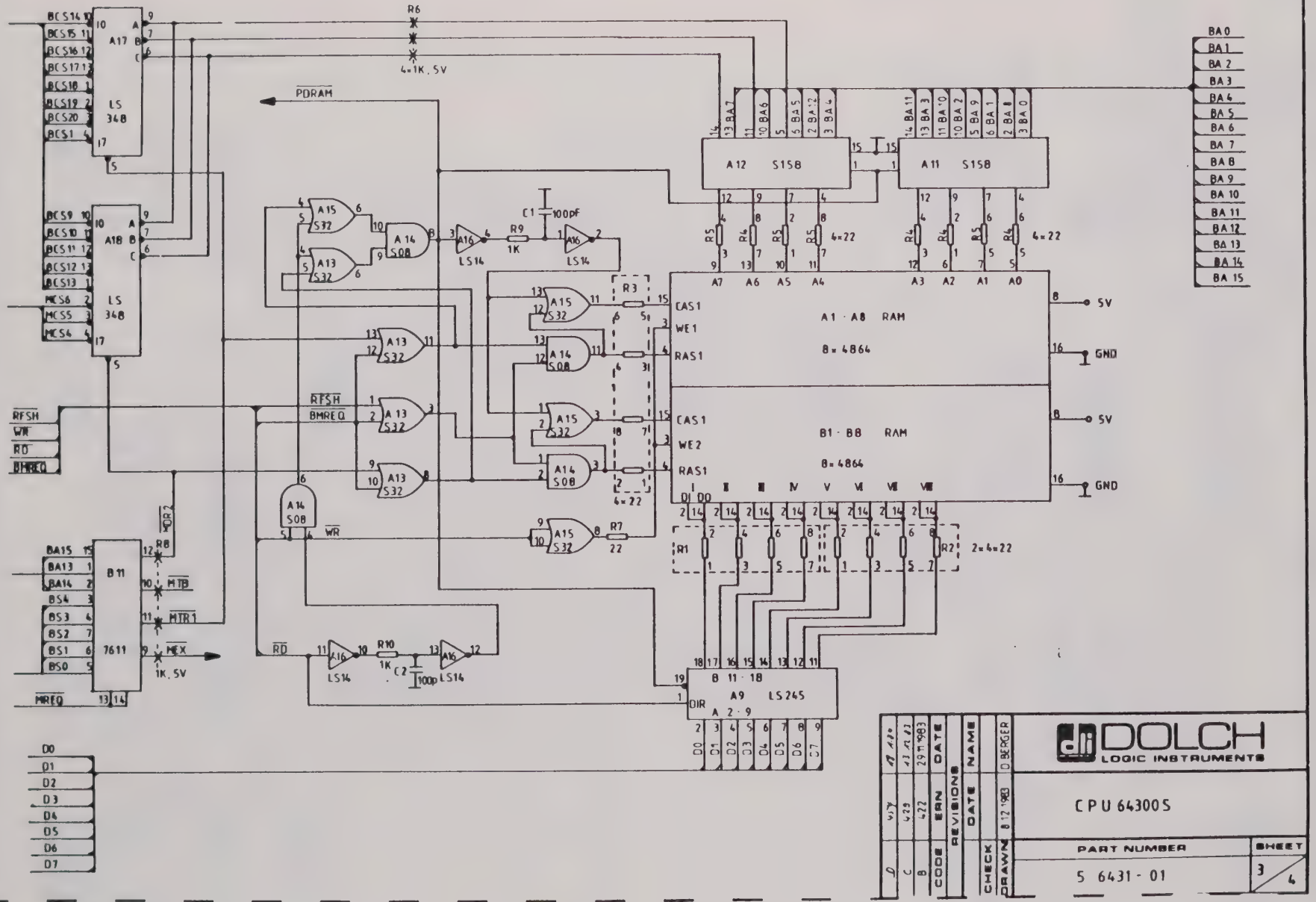

Z 80 A CPU
D4
D5
LS 244
E3
G6
G8
LS02
LS00
G7
7611
B9
LS 174
B10
LS 365
LS 245
A10
A19
LS00
G2
LS32
LS14
D2
LS74
F1
D3
Z80 PIO
G4
LS 244
G3
LS245
G5
1488
D1
1489
E1
E2
R15
J2 60
NMI
J2 5
BUSAK
J2 10
BUSREQ
R15-10K
5V
J2 15
INT
WAIT
RESET
MAINRESET
Y 2,5MHZ
HC14
R18 10K
R19 100
C4 1nF
C3 22pF
47K
10µF
1N4148
V1
R20 1K
R21 1K
CR2
CR3
47pF
R22
PIO
DOUT
CTC
BSR
1K,+5V
JP6
R11
10K
R12
R13
1K
R14
INS
WP
BUSY
10K,5V
J1
B18
A18
+5V
-12V
DOLCH
LOGIC INSTRUMENTS
CPU 64300S
PART NUMBER
SHEET
REVISIONS
DATE
NAME
D. BERGER
25.11.1983
1.12.1983

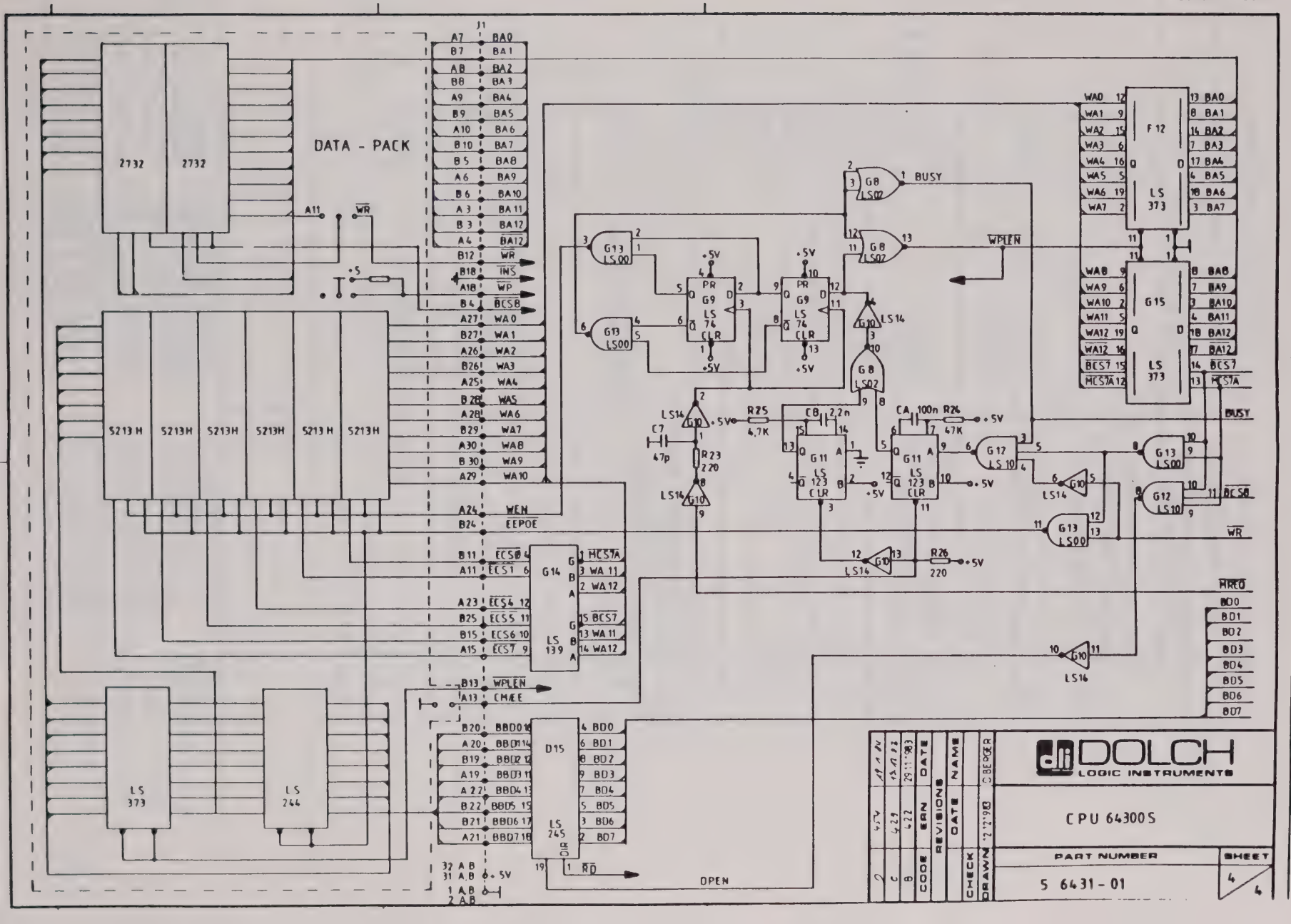


			DATE		NAME		DOLCH LOGIC INSTRUMENTS
		ERN	REVISIONS	DATE			PINOUT CPU-BOARD
		CODE			CHECK	DRAWN	PART NUMBER 5 6431-01 / SHEET 2/2

gedruckt auf [illegible] Wolfgang Walter, Darmstadt PGH 1302/4


BD0
BD1
BD2
BD3
BD4
BD5
BD6
BD7
B14
B16
B15
B12
B13
LS 138
F3
F4
F5
F6
F7
F8
F9
F10
F11
BANK 6
BANK 16
BANK 17
BANK 5
BANK 5
BANK 2
BANK 2
BANK 1
BANK 1
2764
2732
D14
D13
D12
D11
BANK 3A
BANK 3B
BANK 4A
BANK 4B
6116
(2732)
JP5
JP4
JP3
JP1
JP2
WR
MCS7
MREQ
D10
D9
D8
D7
D6
MB1
MB2
MB3
MB4
MENTA B
LS14
A19
LS00
A16
MCS7A
MTB
DOLCH
LOGIC INSTRUMENTS
CPU 64300S
PART NUMBER
5 6431 - 01
SHEET
2 4
REVISIONS
DRAWN
CHECK
D BERGER


A17 LS 348
A18 LS 348
B11 7611
A12 S158
A11 S158
A1 · A8 RAM
8 = 4864
B1 · B8 RAM
8 = 4864
B 11 · 18
A9 LS245
A 2 · 9
PDRAM
RFSH
WR
RD
BMREQ
MREQ
MTB
MTR1
MEX
4 = 1K, 5V
1K, 5V
100pF
LS14
4 = 22
2 = 4 = 22
22
5V
GND
BA0
BA1
BA2
BA3
BA4
BA5
BA6
BA7
BA8
BA9
BA10
BA11
BA12
BA13
BA14
BA15
D0
D1
D2
D3
D4
D5
D6
D7
DOLCH
LOGIC INSTRUMENTS
CPU 64300S
PART NUMBER
5 6431 - 01
SHEET
3
4
DRAWN
CHECK
DATE
NAME
REVISIONS
CODE
ERN
DATE
D BERGER
8.12.1983
29.11.1983


DATA - PACK
2732
2732
S213 H
S213H
S213H
S213H
S213 H
S213 H
LS 373
LS 244
LS 373
LS 139
LS 245
F 12
G 15
G 13 LS00
G 8 LS02
G 9 LS 74 CLR
G 11 LS 123 CLR
G 17 LS 10
G 12 LS10
G 14
D 15
J1
BA0
BA1
BA2
BA3
BA4
BA5
BA6
BA7
BA8
BA9
BA10
BA11
BA12
WR
INS
WP
BCS8
WA0
WA1
WA2
WA3
WA4
WA5
WA6
WA7
WA8
WA9
WA10
WEN
EEPOE
ECS0
ECS1
ECS4
ECS5
ECS6
ECS7
WPLEN
CMEE
BBD0
BBD1
BBD2
BBD3
BBD4
BBD5
BBD6
BBD7
BD0
BD1
BD2
BD3
BD4
BD5
BD6
BD7
HRE0
BCS7
MCS7A
BUSY
RD
OPEN
+5V
R25 4,7K
R23 220
R26 220
C7 47p
C8 2,2n
CA 100n
R24 47K
LS14
DOLCH
LOGIC INSTRUMENTS
CPU 64300S
PART NUMBER
5 6431-01
SHEET
4/4
DRAWN
CHECK
DATE
NAME
REVISIONS
CODE
EAN
DATE

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
1	56431-02	PC-BOARD Rev A.	
1		7416/7406	U1
1		BC237	Q1
6		680 pF	C2...5, 7, 8
1		820 pF	C6
1		2,2 nF	C9
1		6,8 nF	C16
1		22 nF	C14
1		68 nF	C12
1		10 µF/10V	C15
2		10 µF/35V	C11, 13
1		TRIMMER 500 Ω	R13
3		120 Ω	R1...3
2		150 Ω	R32, 33
3		180 Ω	R10...12
3		300 Ω	R7...9
1		430 Ω	R30
6		1K Ω	R4...6, 28, 29, 31
4		0 Ω	R4

CODE	ERN	DATE	NAME
F	501	28.8.84	Schulte
E	435	8.11.84	
C	427	21.11.85	
B	449		
A			

REVISIONS

DRAWN Schulte 6.6.86
CHECK

DOLCH LOGIC INSTRUMENTS

PART LIST
MOTHER BOARD 1

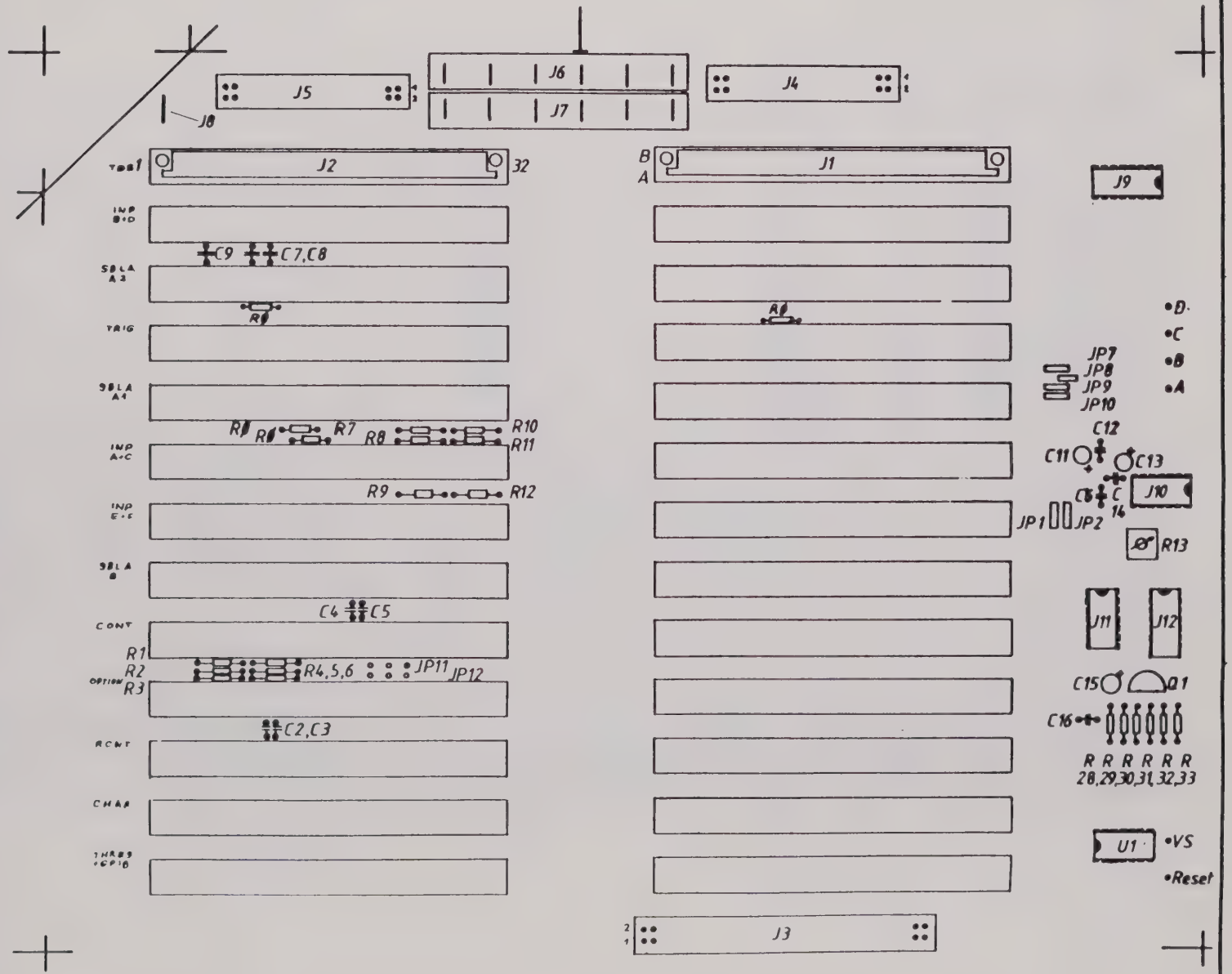
PART NUMBER: 56431-02

SHEET: 1/2

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION	
1		IC-SOCKEL 14p.	U1	
2		PRÄZISIONSSOCKEL 14p.	J10, 11	
2		PRÄZISIONSSOCKEL 16p.	J9, 12	
26		VG-LEISTEN 64p.	J1, J2	*
1		STIFTLEISTE 64p. ger.	J3	*
2		STIFTLEISTE 40p. ger.	J4, 5	*
12		(2×6) FLACHSTECKER (6,3×0,8)	J6, J7	*
1		FLACHSTECKER (6,3×0,8)	J8	*

* FÜR 2,5mm BASISMATERIAL

F	507	12.Mai						DOLCH LOGIC INSTRUMENTS	
E	455	27.Jan						PART LIST	
C	421	8.Mai						MOTHERBOARD 1	
B	417	21.Mai							
A								PART NUMBER	SHEET
CODE	ERN	DATE	REVISIONS	DATE	NAME	CHECK	DRAWN	56431-02	2/2



E	507 695	12 Feb 84 31 Jan 84
C	4.27	8/11/83
B	4.19	28/11/83
A		
CODE	ERN	DATE

REVISIONS

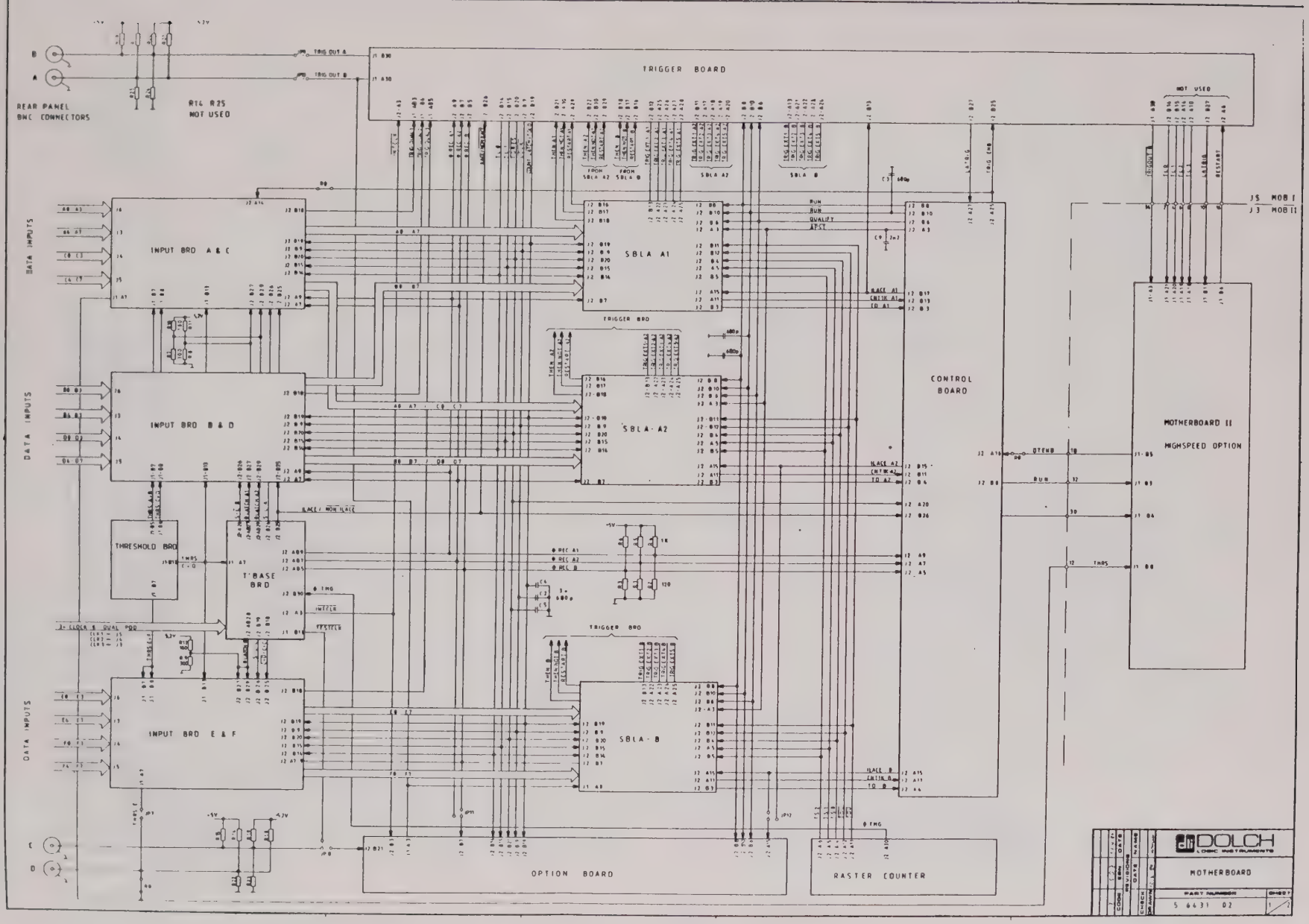
	DATE	NAME
CHECK		
DRAWN	11.11.83	Berger

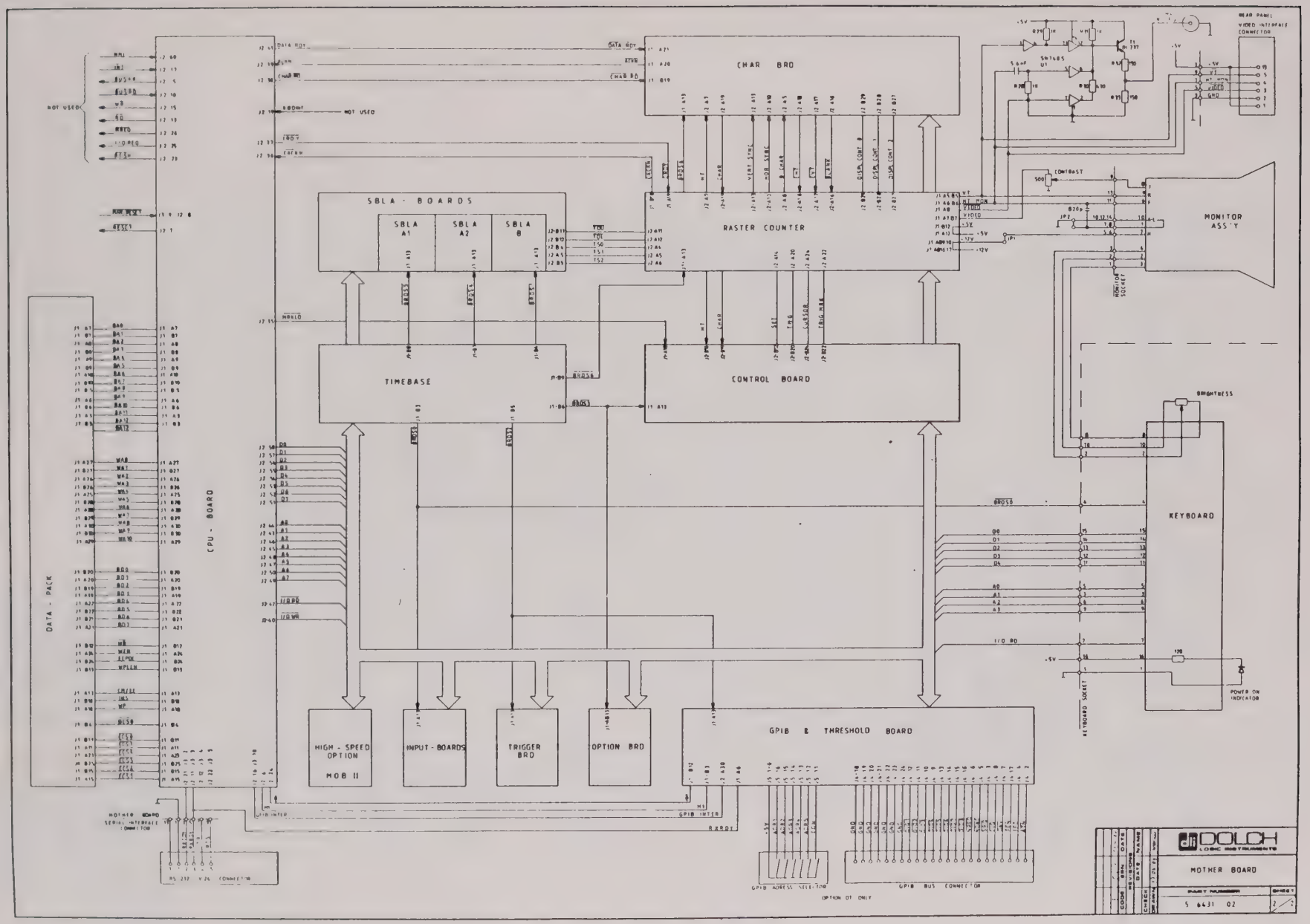
DOLCH LOGIC INSTRUMENTS

PART NUMBER 5 6431-02

MOTHER BOARD 1

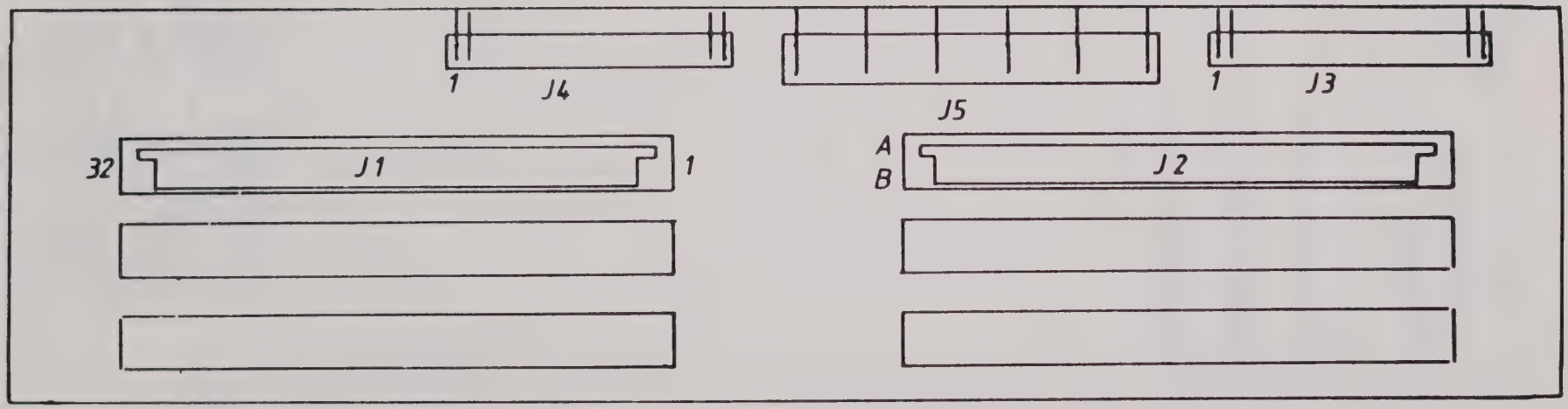
SHEET 1/1


REAR PANEL
BNC CONNECTORS
R14 R25
NOT USED
TRIGGER BOARD
INPUT BRD A & C
INPUT BRD B & D
INPUT BRD E & F
DATA INPUTS
SBLA A1
SBLA A2
SBLA B
TRIGGER BRD
CONTROL BOARD
MOTHERBOARD II
HIGHSPEED OPTION
THRESHOLD BRD
T BASE BRD
OPTION BOARD
RASTER COUNTER
MOTHERBOARD
S 6431 02


CHAR BRD
SBLA - BOARDS
SBLA A1
SBLA A2
SBLA B
RASTER COUNTER
TIMEBASE
CONTROL BOARD
CPU - BOARD
DATA - PACK
HIGH - SPEED OPTION
MOB II
INPUT - BOARDS
TRIGGER BRD
OPTION BRD
GPIB & THRESHOLD BOARD
MONITOR ASS'Y
KEYBOARD
CONTRAST
BRIGHTNESS
POWER ON INDICATOR
NOT USED
GPIB ADDRESS SELECTION
GPIB BUS CONNECTOR
OPTION 01 ONLY
MOTHER BOARD
5 6431 02

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
1	5 6431-03	PC-BOARD Rev: Ø	
6		VG-LEISTEN 64 p.	J1, J2 *
2		STIFTLEISTE 40p. gew.	J3, J4 *
6		1x6 FLACHSTECKER (6,3x0,8) gew.	J5 *

* FÜR 2,5 mm BASISMATERIAL



A		
CODE	ERN	DATE
REVISIONS		
	DATE	NAME
CHECK		
DRAWN	14.11	

MOTHERBOARD 2

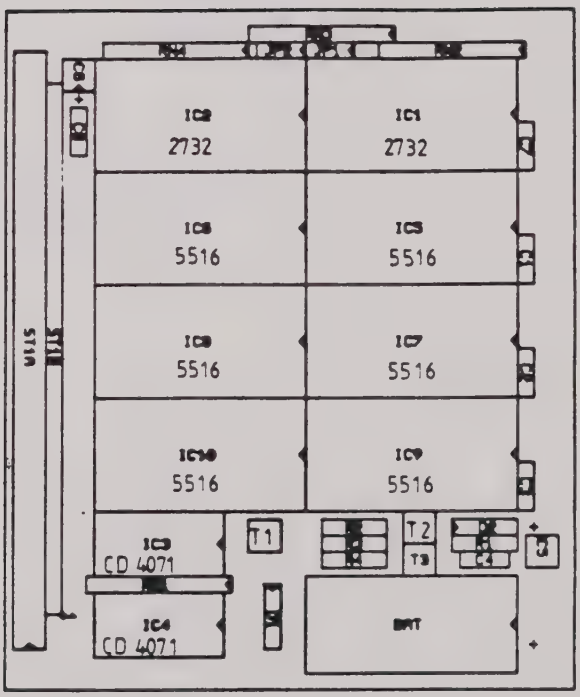
DOLCH LOGIC INSTRUMENTS

PART NUMBER 5 6431-03

SHEET

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
1		2732 (6116)	IC1 (OPTION)
1		2732	IC2 (OPTION)
6		5516 (6116)	IC5,6,7,8,9,10
2		CD4071	IC3,4
2		BC 517	T2,T3
1		2N 2907A	T1
1		1N 4148	D1
1		BZX 55 - C3V6	D2
6		100nF (Vielschicht)	C1,2,3,4,7,8
1		10µF/25V (Tantal)	C6
1		22µF/10 V (Tantal)	C5
4		8 x 100KΩ 9pol.	RN1,2,3,4
1		100Ω	R1
1		220Ω	R3
2		10KΩ	R2,4
2		Stiftleiste 3pol.	JP1, JP2
1		VG-Leiste gew. 64pol.	ST1
2		IC-Sockel 14p.	
8		IC-Sockel 24p.	
1		Batterie: ½ AA/P / ½ AA/PI	BAT (Sonnenschein)
1	5 6431-05	Platine Rev: A	
2		JUMPER	

		26.4.84	DATE	NAME	DOLCH LOGIC INSTRUMENTS		
		ERN	DATE	REVISIONS	PART LIST CMOS 1 PAK		
A	CODE			CHECK	DRAWN 26.4.84 D. Berger	PART NUMBER 5 6431-05	SHEET 1/1

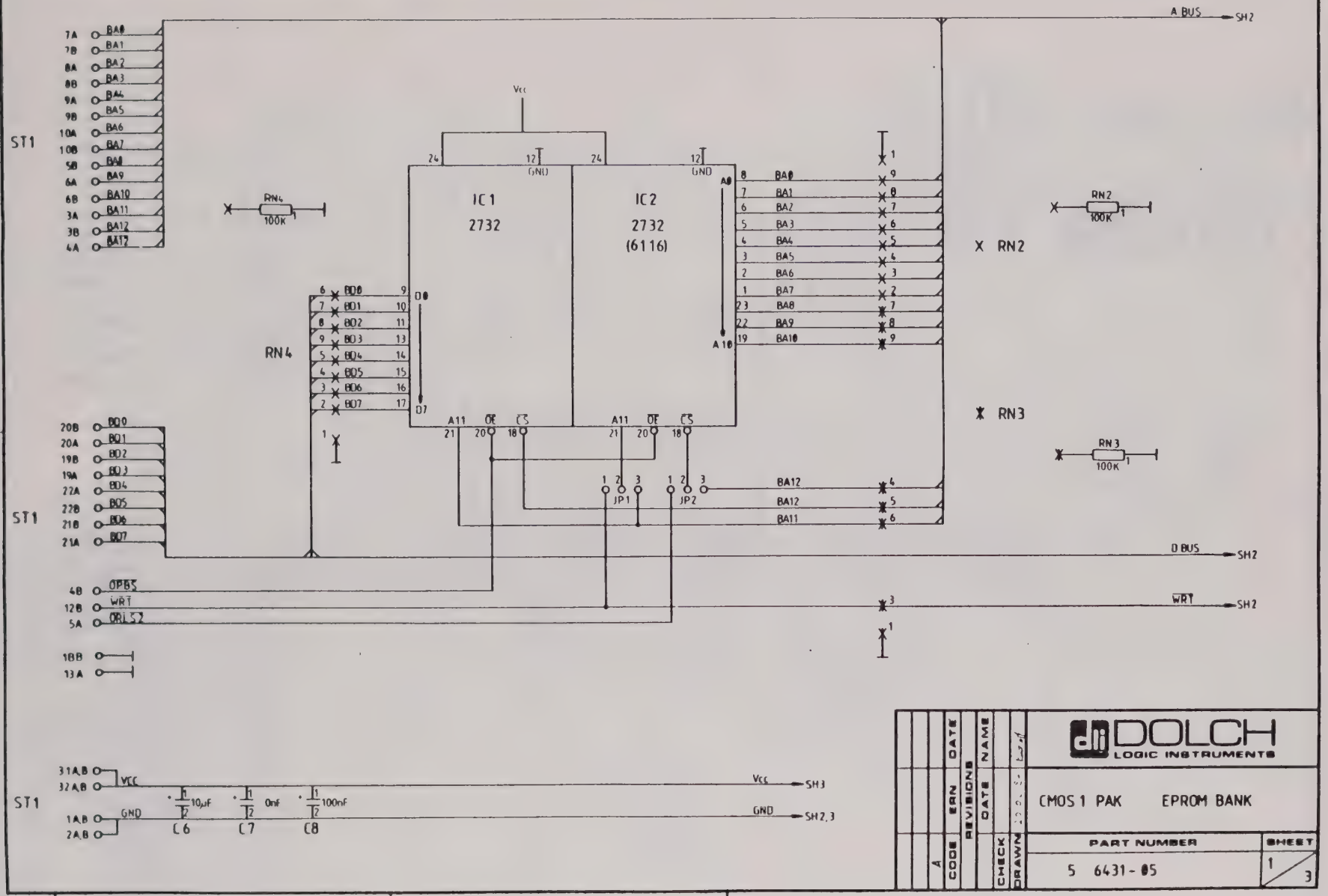


DOLCH LOGIC INSTRUMENTS

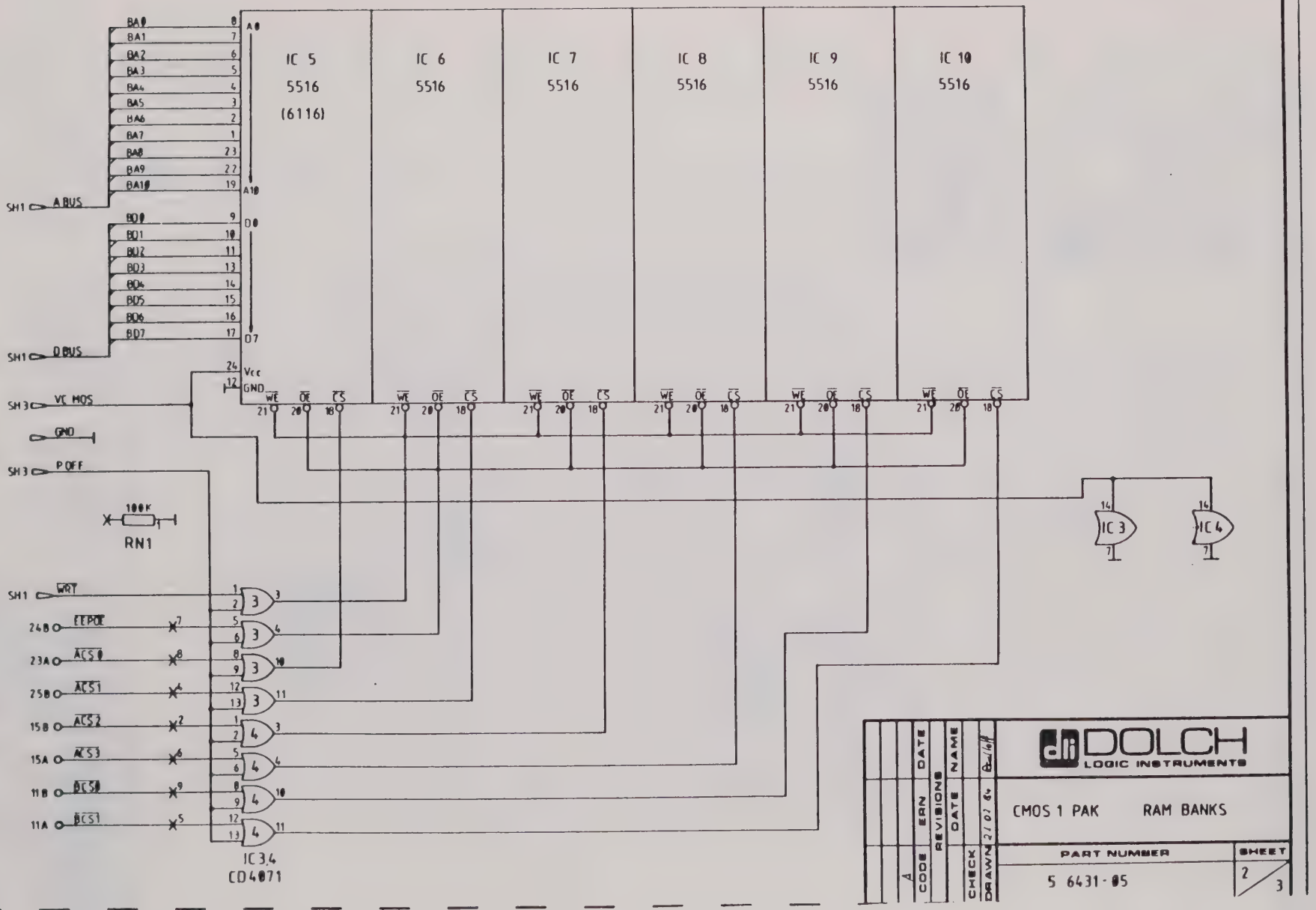
CMOS 1 PAK

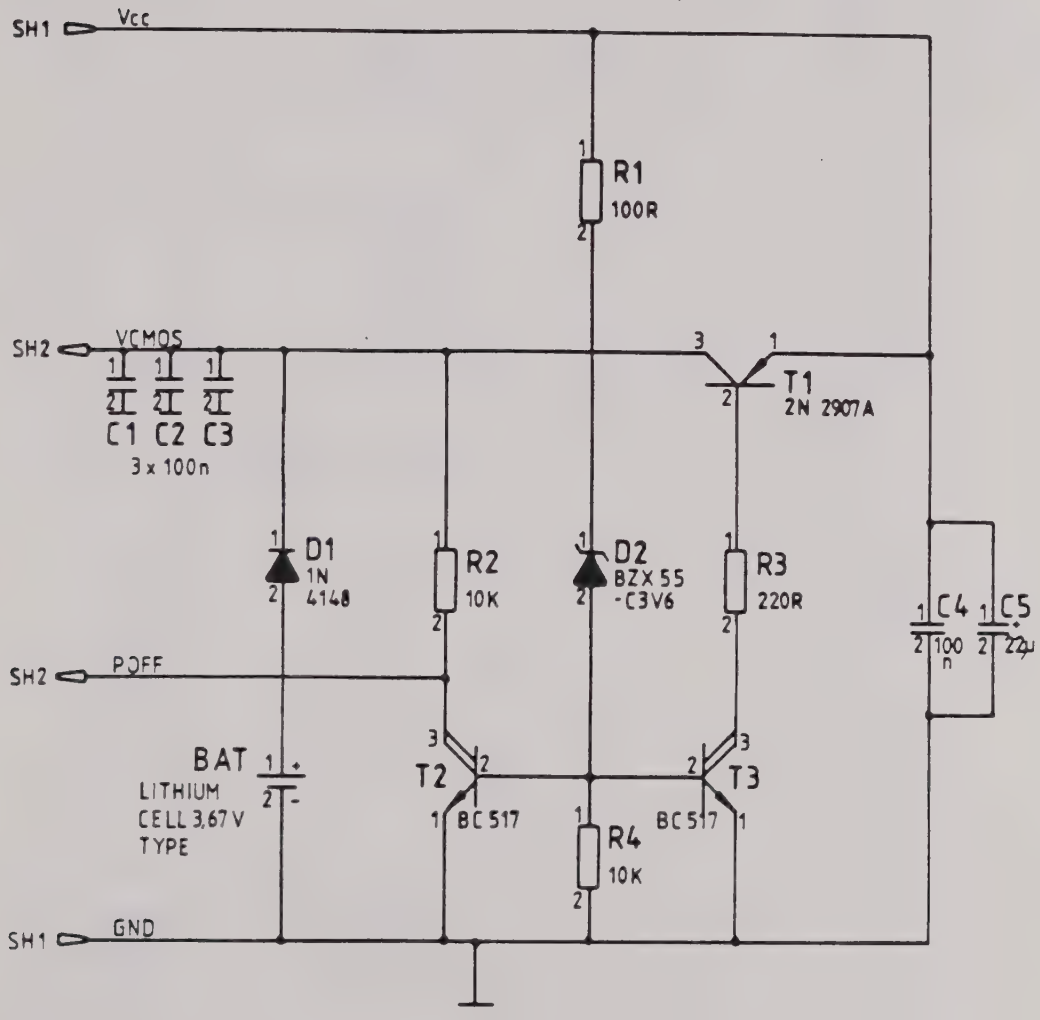
PART NUMBER

5 6431 - 05



							DOLCH LOGIC INSTRUMENTS	
							CMOS 1 PAK EPROM BANK	
							PART NUMBER	SHEET
A	CODE	ERN	DATE	REVISIONS	DATE	NAME	5 6431-05	1/3
						CHECK		
						DRAWN		


IC 5
5516
(6116)
IC 6
5516
IC 7
5516
IC 8
5516
IC 9
5516
IC 10
5516
BA0
BA1
BA2
BA3
BA4
BA5
BA6
BA7
BA8
BA9
BA10
A0
A10
SH1 ABUS
BD0
BD1
BD2
BD3
BD4
BD5
BD6
BD7
D0
D7
SH1 DBUS
Vcc
GND
SH3 VC MOS
GND
SH3 POFF
100K
RN1
SH1 WRT
24B EEPOE
23A ACS0
25B ACS1
15B ACS2
15A ACS3
11B BCS0
11A BCS1
IC3,4
CD4071
IC 3
IC 4
DOLCH
LOGIC INSTRUMENTS
CMOS 1 PAK RAM BANKS
PART NUMBER
5 6431-05
SHEET
2/3
DRAWN
CHECK
DATE
NAME
REVISIONS
DATE
ERN
CODE
A



					DOLCH LOGIC INSTRUMENTS
					CMOS 1 PAK
					POWER FAIL DETECTOR
				PART NUMBER	SHEET
				5 6431-05	3/3

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QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
2		LS 04	
2		S 157	
4		LM 741	
2		93 S 16	
4		10 100	
5		10 116	
1		10 124	
5		10 125	
4		10 130	
4		10 131	
1		LM 337k / LM 337T	
1		82 Ω	R53
2		120 Ω	R34,52
1		180 Ω	R4
1		220 Ω	R 11
1		270 Ω	R 10
1		300 Ω	R 5
1		470 Ω	R35
4		3k3 5% Metallfilm	R 8,18,25,29
4		2k67 1% "	R45,47,49,51
4		3k24 1% "	R44,46,48,50
4		51k1 1% "	R7,17,24,32
8		24k9 91% "	R3,6,14,16,21,23,28,31
4		4k99 0,1% "	R9,15,22,30
6		SIL 8x150 Ω	R2, 13, 20, 27, 37, 39
6		SIL 8x470 Ω	R36, 38, 40, 41, 42, 43
4		SIL 4x1k	*

R 52, 53 → RM 12,7mm
Sonstige RM 10,16 mm

* von unten bestücken

A1 : INPUT A+C / B+D

H	326	30.6.83	DATE	NAME	
G		ERN	REVISIONS	DATE	CHECK
CODE		DATE			DRAWN 14.5.81

DOLCH LOGIC INSTRUMENTS

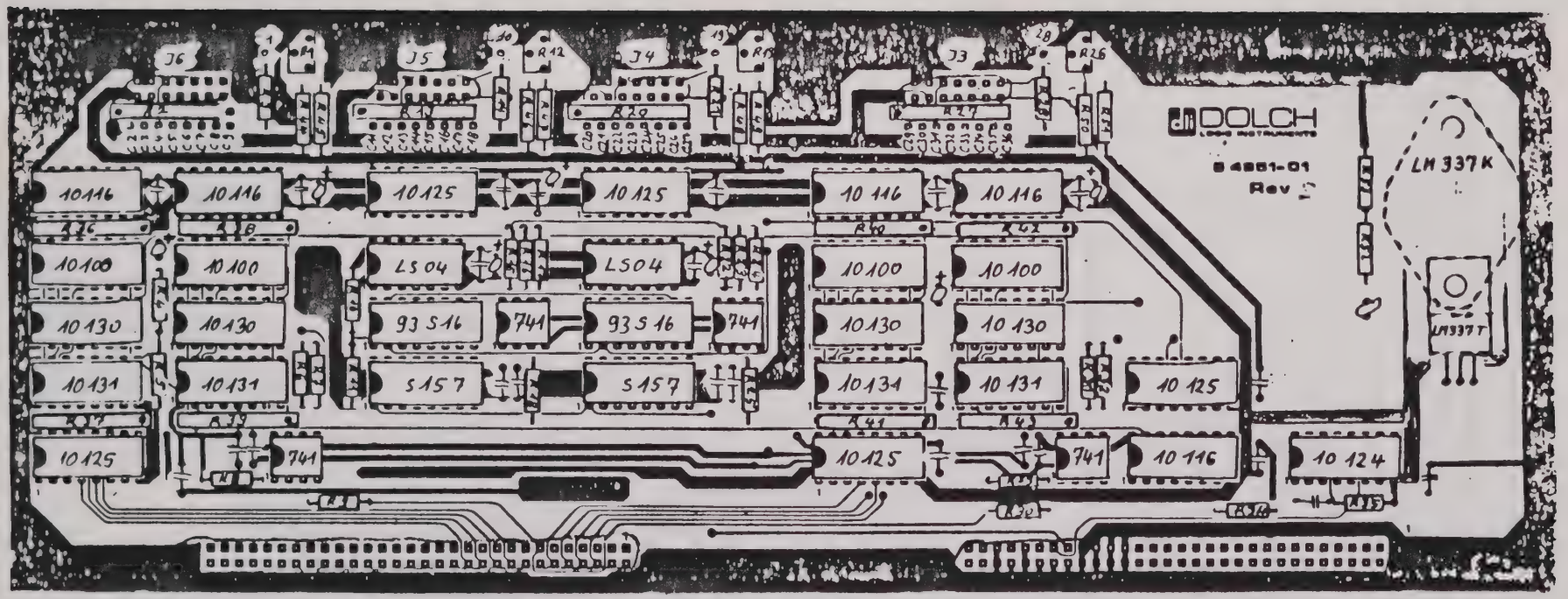
PART LIST

INPUT BOARD

PART NUMBER	SHEET
5 4851-01 A1	1/2

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
4		R-TRIMMER 1k	R1, 12, 19, 26
4		1nF	C1, 10, 19, 28
16		47pF	C2 ... 9, 29 ... 36
16		82pF	C11 ... 18, 20 ... 27
8		10µF/35V	8
24		22n	÷
4		14p. Wire Wrap Leiste (abgew.)	
4		Sockel 8p.	
2		Sockel 14p.	
27		Sockel 16p.	

4	6	JLL	14.5.81	DOLCH LOGIC INSTRUMENTS		
CODE		ERN	DATE	PART LIST		
		REVISIONS	NAME	INPUT BOARD		
		DATE		PART NUMBER	SHEET	
		CHECK		5 4851-01 A2	2/2	
		DRAWN	14.5.81			



alle Widerstände haben RM: 10,16 mm !

R 52, 53 haben RM: 12,7 mm !

A 1 → A·C/B·D
A 2 → E·F

					DOLCH LOGIC INSTRUMENTS	
H	926	30.6.81			ASS'Y DRAWING	
ODE	ERN	DATE	REVISIONS	DATE	NAME	
					INPUT BOARD	
ECK	AWN	8.10.81	Fabrik		PART NUMBER	SHEET
					5 · 35 · 6 · 1	

J1

A		B
+5V	1	+5V
+5V	2	+5V
DI"C 7 OR DI"D 7	3	DI"A 7 OR DI"B 7
DI"C 6 OR DI"D 6	4	DI"A 6 OR DI"B 6
DI"C 5 OR DI"D 5	5	DI"A 5 OR DI"B 5
DI"C 4 OR DI"D 4	6	DI"A 4 OR DI"B 4
	7	THRS A OR THRS B
	8	THRS C+D
DI"C 3 OR DI"D 3	9	DI"A 3 OR DI"B 3
DI"C 2 OR DI"D 2	10	DI"A 2 OR DI"B 2
DI"C 1 OR DI"D 1	11	DI"A 1 OR DI"B 1
DI"C 0 OR DI"D 0	12	DI"A 0 OR DI"B 0
BRDS1	13	THRS C+Q
-12V	14	-12V
-12V	15	-12V
+12V	16	+12V
+12V	17	+12V
C7=$\overline{\text{MRKLD}}$	18	C6=$\overline{\text{CACKN}}$
C5=$\overline{\text{CRDY}}$	19	C4=$\overline{\text{CHAR RD}}$
C3=$\overline{\text{ACKN}}$	20	C2=$\overline{\text{I/O-WR}}$
C1=$\overline{\text{DATA RDY}}$	21	C0=$\overline{\text{I/O-RD}}$
A1	22	A0
A3	23	A2
A5	24	A4
A7	25	A6
D7	26	D6
D5	27	D4
D3	28	D2
D1	29	D0
	30	
GND	31	GND
GND	32	GND

J2

A		B
GND	1	GND
GND	2	GND
	3	
	4	
	5	
	6	
Ø REC A2	7	
	8	
Ø REC A1	9	LCLK
	10	
	11	
	12	
	13	
	14	TL 0
	15	TL 1
	16	
	17	
	18	TOUAL
	19	TGLD
	20	$\overline{\text{TGRES}}$
	21	
	22	
	23	
	24	
	25	ILACE/$\overline{\text{NON ILACE}}$ *
	26	SAMPLE/$\overline{\text{LATCH}}$
	27	Ø LATCH A1(ECL)
	28	
	29	Ø LATCH A2(ECL)
	30	
+5V	31	+5V
+5V	32	+5V

J3, J4, J5, J6 = ALP 44 CONNECTOR

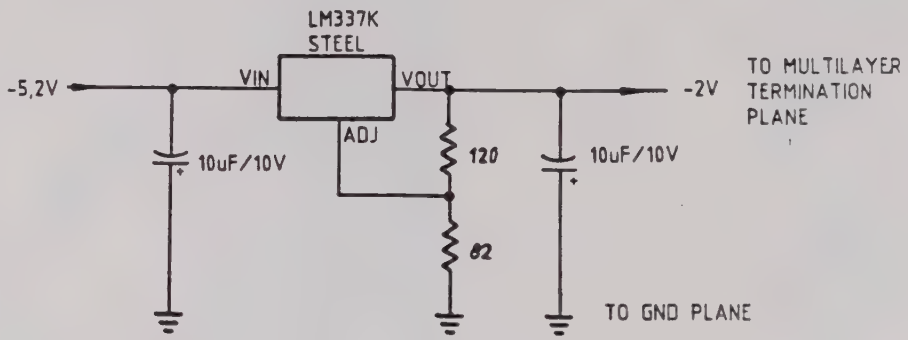
* FOR INPUT BRD E&F: C+D / C+C

CODE	BRN	DATE
	REVISIONS	NAME
		DATE
	CHECK	
	DRAWN	21.12.81

DOLCH LOGIC INSTRUMENTS

INPUT BOARD

PART NUMBER	SHEET
5.4851 - 01	1/1



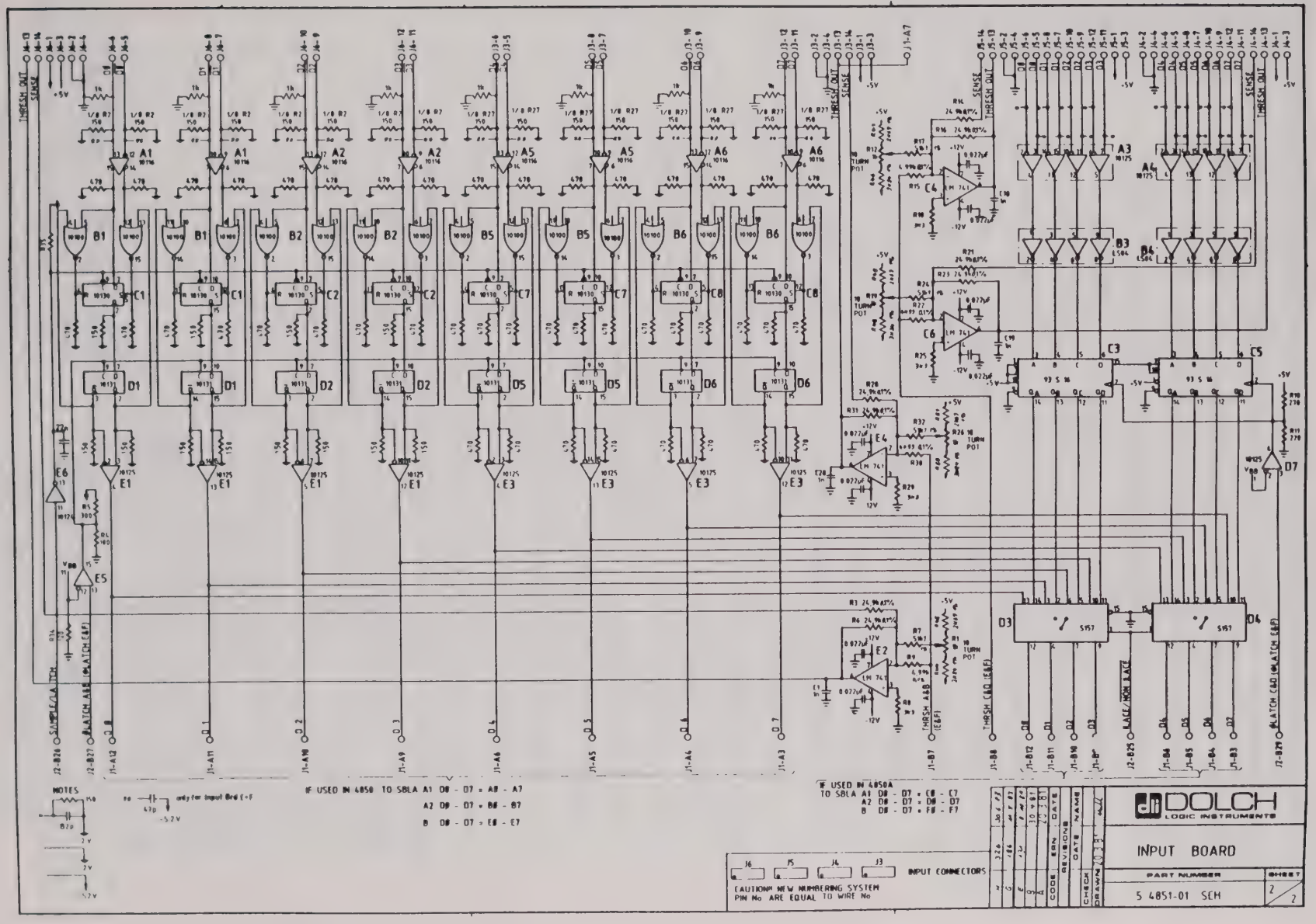
NOTES: 1. REVISION A AND B DONT HAVE A GND PLANE AND THE
-2V TERMINATION PLANE.
ALL TERMINATION RESISTORS ARE CONNECTED TO -5,2 VOLTS.

H	32.8	30.6.81					
G	1.86	21.5.81					
E	1.31	8.10.81					
D		7.9.81					
CODE	ERN	DATE	REVISIONS	DATE	NAME	CHECK	
DRAWN	7.9.81	KKL					

DOLCH
LOGIC INSTRUMENTS

INPUT BOARD

PART NUMBER	SHEET
5 4851-01 SCH	1/2


DOLCH
LOGIC INSTRUMENTS
INPUT BOARD
PART NUMBER
5 4851-01 SCH
SHEET
2 2
INPUT CONNECTORS
J6 J5 J4 J3
CAUTION! NEW NUMBERING SYSTEM
PIN No ARE EQUAL TO WIRE No
NOTES
IF USED IN 4850 TO SBLA A1 D8 - D7 = A8 - A7
A2 D8 - D7 = B8 - B7
B D8 - D7 = E8 - E7
IF USED IN 4850A
TO SBLA A1 D8 - D7 = C8 - C7
A2 D8 - D7 = D8 - D7
B D8 - D7 = F8 - F7

POS	ITEM	DLI - PART - NO	QT
	LS 04		1
	LS 32		1
	LS 74		1
	LS 138		2
	LS 164		2
	LS 390		3
	S 04		1
	S 51		1
	S 64		1
	S 151		1
	93S 16		1
	LM 747		1
	74 C 164		7
	10 100		10
	10 124		1
	10125		1
	10131		3
	10164		3
R29 ... 29	390 Ω		3
R16, 48, 49, 50	82 Ω		4
R 34, 37	180Ω		2
R 18 ... 21	}		
R 35, 36	} 330Ω		6
R 9, 17, 30-33, 38-41 22-26	470 Ω		21
R55	2k67 1% Metall film		1
R 7,8	51K 1% "		2

I	339	20.MAR83	CODE	ERN	REVISIONS	DATE	NAME
H	2.16	AUG83					
G						DRAWN	M.S. 82
						CHECK	

DOLCH
LOGIC INSTRUMENTS

PART LIST

TIME BASE BOARD

PART NUMBER	SHEET
5 4851 - 02	1/2

POS	ITEM	DLI - PART - NO	QT
R 3,4	3k3 5% Metallfilm		2
R 5,6	4k 99 0,1% "		2
R 12--15	24 k 9 0,1% "		4
R 54	3k 24 1% "		1
R 51--53	SIL 8 x 150Ω		3
R 1,2	R - Trimmer 1K		2
R*	220Ω		
R*	270Ω		
Q 1,2	BF 397 / BF 324		2
Y 1	Quartz 20 MHz		1
Y 2	Quartz 50 MHz		1
C 6	27 pF		1
C 4	47 pF		1
C 7,8,9	100 pF		3
C 1,2	1 nF		2
C 5	22 µF / 6V		1
C 3 ⏚	22 n		22
∅	10 µF / 35V		10
	14 p. Wire Wrap Leisten (gerade)		3
	Sockel 14 p.		16
	Sockel 16 p.		25

R* von Lötseite bestücken

REVISIONS	CODE	ERN	DATE	NAME
I	322		20.10.81	
H	286		15.9.81	
G				

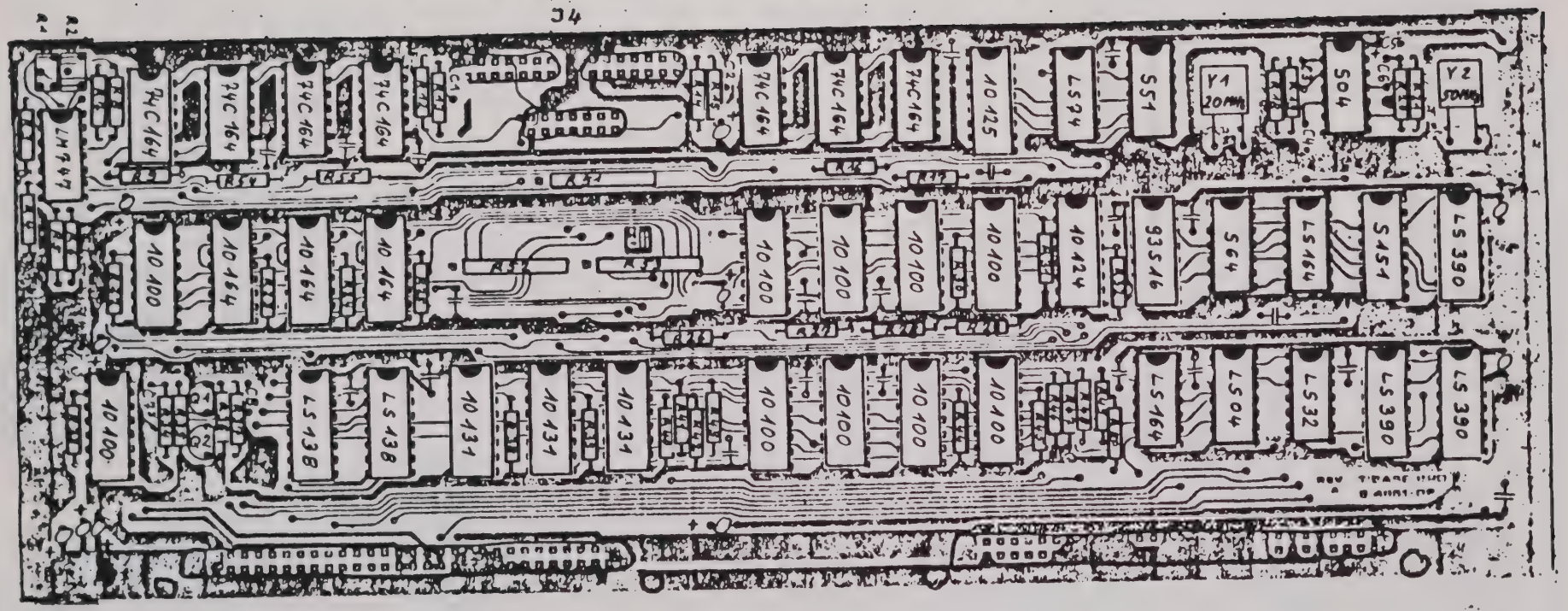
CHECK
DRAWN 19.5.81 Zahrl

DOLCH LOGIC INSTRUMENTS

PART LIST
TIME BASE BOARD

PART NUMBER 5 4851 - Ø2

SHEET 2/2


74C164
74C164
74C164
74C164
74C164
74C164
74C164
10 125
LS 124
SS1
Y1 20MHz
Y2 10MHz
S04
LS 447
10 100
10 100
10 100

J1

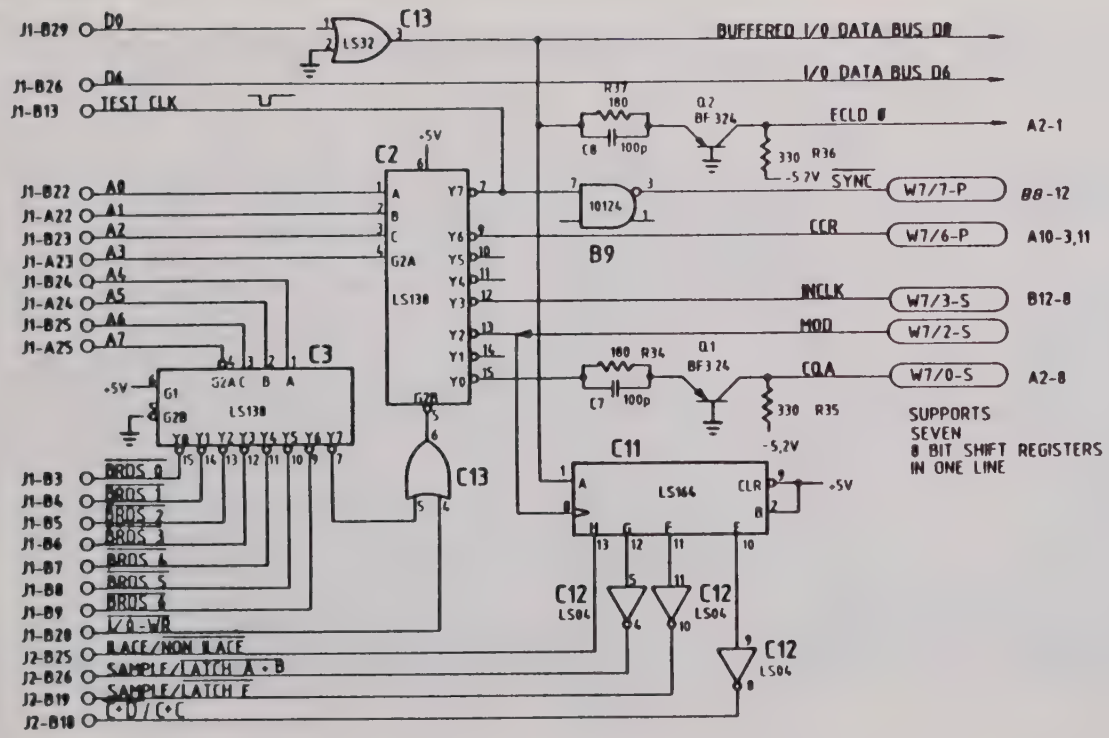
A		B
+5V	1	+5V
+5V	2	+5V
	3	$\overline{\text{BRDS 0}}$
	4	$\overline{\text{BRDS 1}}$
	5	$\overline{\text{BRDS 2}}$
	6	$\overline{\text{BRDS 3}}$
THRS C+Q	7	$\overline{\text{BRDS 4}}$
	8	$\overline{\text{BRDS 5}}$
	9	$\overline{\text{BRDS 6}}$
	10	
	11	
	12	
	13	TEST CLK
-12V	14	-12V
-12V	15	-12V
+12V	16	+12V
+12V	17	+12V
C7=$\overline{\text{MRKLD}}$	18	C6=$\overline{\text{CACKN}}$
C5=$\overline{\text{CRDY}}$	19	C4=$\overline{\text{CHAR RD}}$
C3=$\overline{\text{ACKN}}$	20	C2=$\overline{\text{I/O-WR}}$
C1=DATA RDY	21	C0=$\overline{\text{I/O-RD}}$
A1	22	A0
A3	23	A2
A5	24	A4
A7	25	A6
D7	26	D6
D5	27	D4
D3	28	D2
D1	29	D0
	30	
GND	31	GND
GND	32	GND

J2

A		B
GND	1	GND
GND	2	GND
	3	
	4	
Ø REC B	5	Ø REC B
	6	
Ø REC A2	7	Ø REC A2
	8	
Ø REC A1	9	Ø REC A1
	10	
	11	
	12	
	13	
	14	
	15	
	16	
	17	
	18	$\overline{\text{C+D}}$ / C+C
	19	SAMPLE / LATCH E
	20	
	21	
	22	
	23	
	24	
	25	ILACE/$\overline{\text{NON ILACE}}$
	26	SAMPLE/$\overline{\text{LATCH}}$ A+B
Ø LATCH A1(ECL)	27	Ø LATCH A1(ECL)
Ø LATCH B(ECL)	28	Ø LATCH B(ECL)
Ø LATCH A2(ECL)	29	Ø LATCH A2(ECL)
	30	Ø TMG
+5V	31	+5V
+5V	32	+5V

J3, J4, J5 = ALP 44 CONNECTOR

				DOLCH LOGIC INSTRUMENTS	
CODE	SRN	REVISIONS	DATE	NAME	DATE
			CHECK		
			DRAWN		21 11 81
TIMEBASE					
PART NUMBER					SHEET
5 4851 - 02					1/1



CODE	REVISIONS	DATE	NAME
A		23381	
B		30481	
C		20824	
D		39811	
E	432	8 10 84	
F	744	2 11 84	
G	784	11 5 85	

CHECK

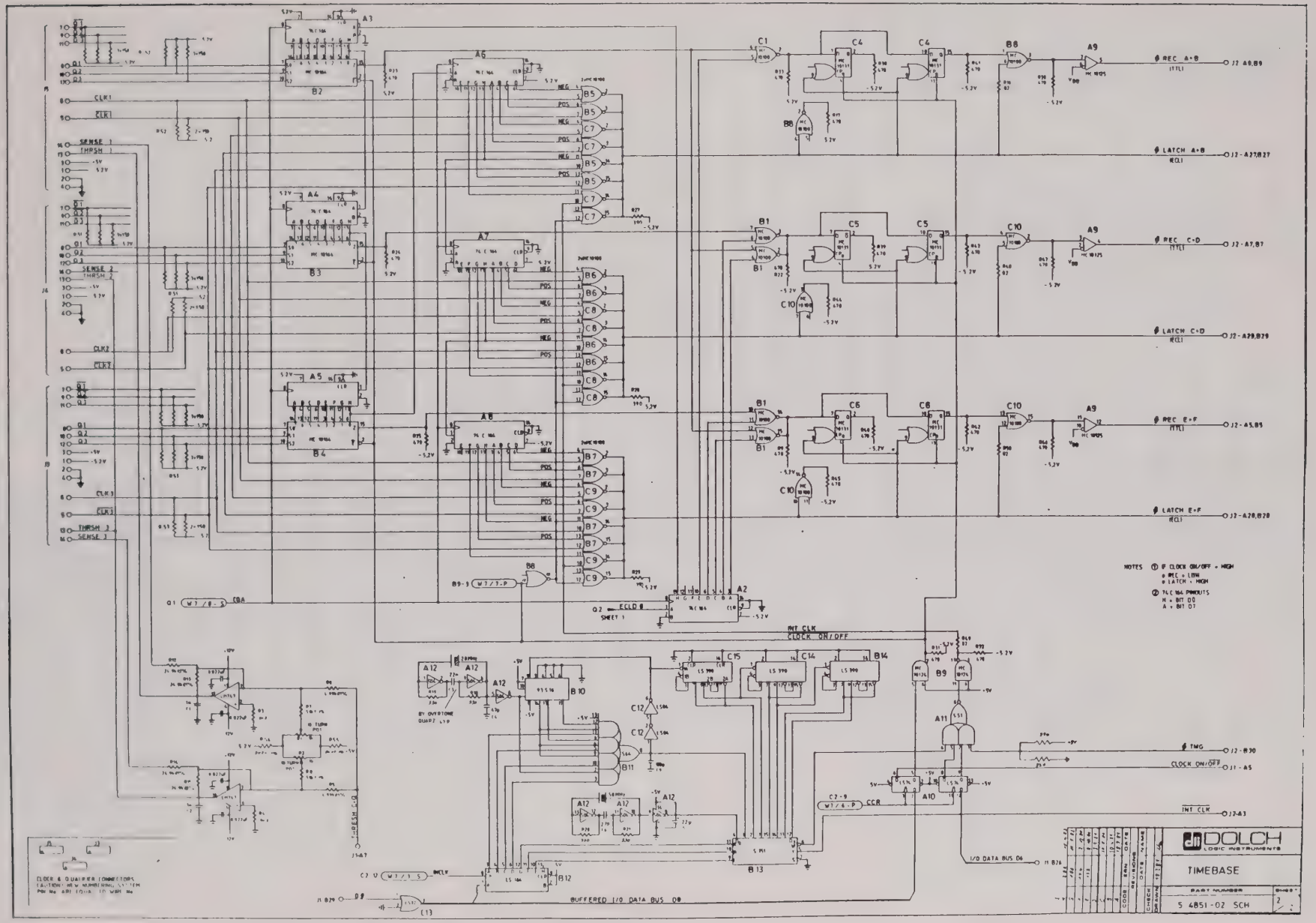
DRAWN 23381 AC

DOLCH LOGIC INSTRUMENTS

TIMEBASE

PART NUMBER 5 851-02 SCH

SHEET 1/2


TIMEBASE
DOLCH
LOGIC INSTRUMENTS
5 4851-02 SCH
NOTES ① IF CLOCK ON/OFF = HIGH
ø REC = LOW
ø LATCH = HIGH
② 74C164 PINOUTS
H = BIT 00
A = BIT 07
ø REC A+B
ø LATCH A+B
ø REC C+D
ø LATCH C+D
ø REC E+F
ø LATCH E+F
ø TMG
CLOCK ON/OFF
INT CLK
BUFFERED I/O DATA BUS D0
I/O DATA BUS D6
SENSE 1
SENSE 2
SENSE 3
CLK1
CLK2
CLK3
ECLD Ø
CCR

POS	ITEM	DLI - PART - NO	QT
C5	680 p		1
C6**	68p		1
	Sockel 16p.		21
	Sockel 20p.		3
	Sockel 24p.		1
	Sockel 14p.		15
JP4,5	Stiftleiste (gerade) 3p.		2
	Stiftleiste (gerade) 2p.		2
	Jumper 2p.		4

** auf der Platine noch nicht vorgesehen

CODE	ERN	REVISIONS	DATE	NAME
6	592		4.4.84	Gerstl
	6457		9.4.84	S. Hirsch

CHECK
DRAWN

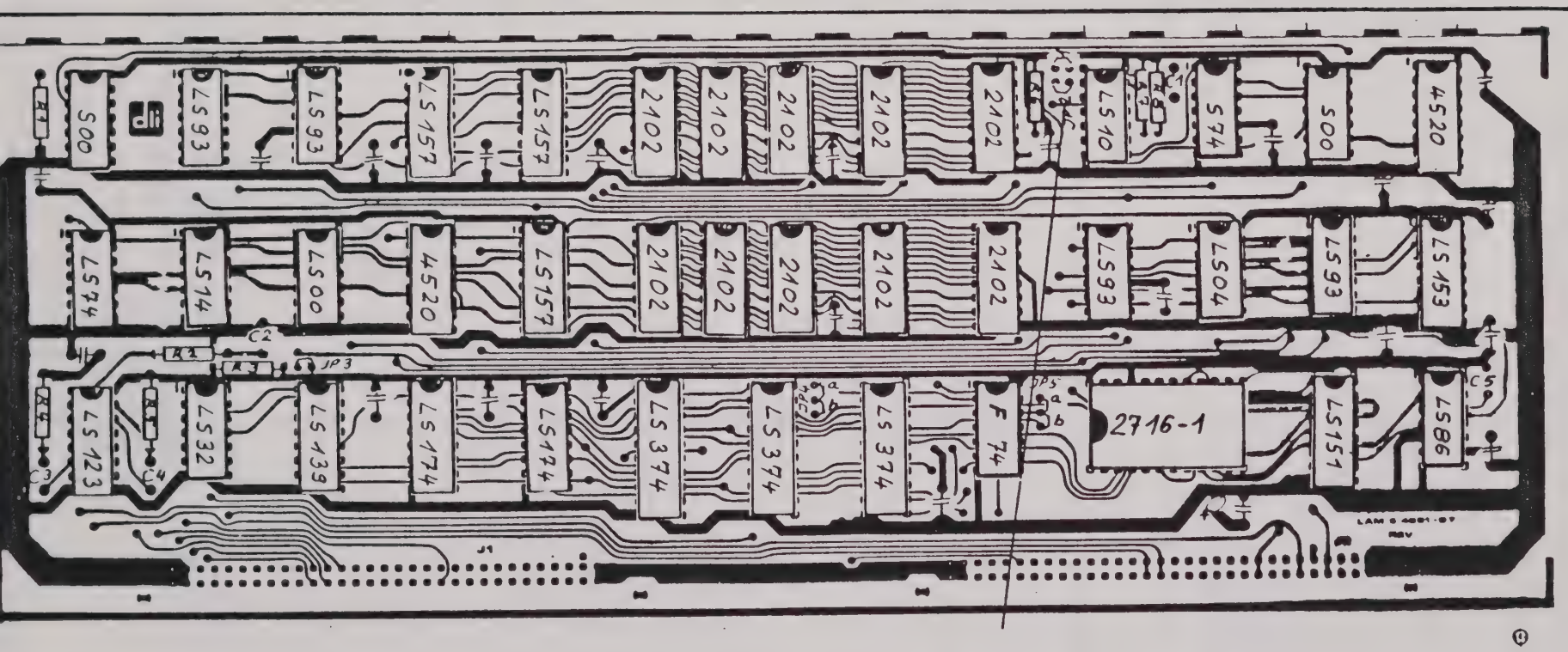
DOLCH LOGIC INSTRUMENTS

PART LIST

CHARACTER BOARD

PART NUMBER 5 4851-07

SHEET 2/2



for LAM 1650/3250/4850 cut trace

A 2

JP 5 a – 4850 A

b – 1650/3250/4850

JP 4 a – 1650/3250/4850

b – 4850 A

JP 3,2,1 – 1650/3250/4850

C6 = 68p between IC B14 - 9 ↔ +5V

LAM 1650/3250/4850 (A2) : 4 4850-04

LAM 4850A (A) : 4 4851-01

DOLCH LOGIC INSTRUMENTS

ASS'Y DRAWING
CHARACTER BOARD

PART NUMBER	SHEET

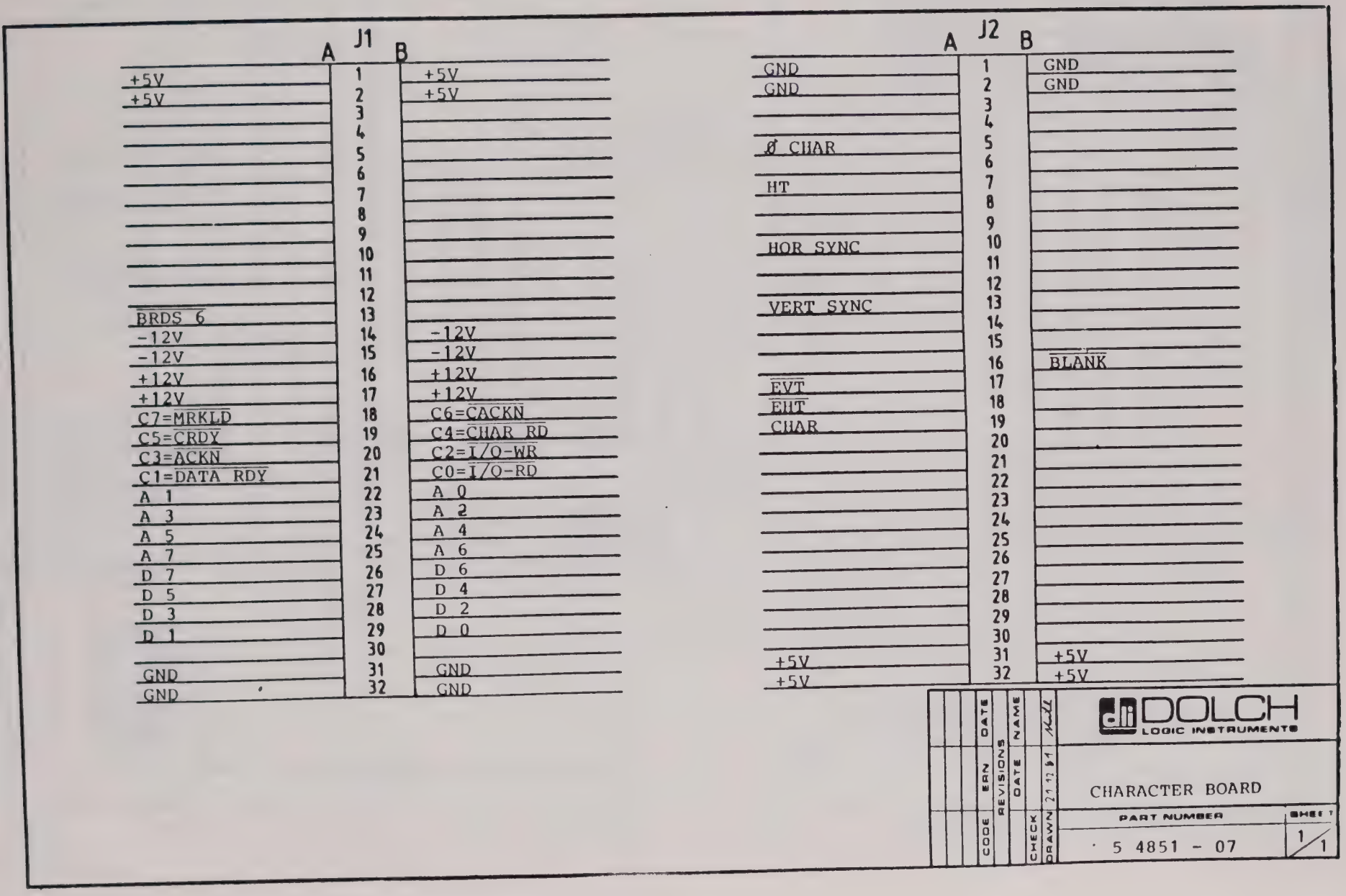
CODE	ERN	DATE	NAME
506	454	14.4.77	Semrau
		4.4.77	

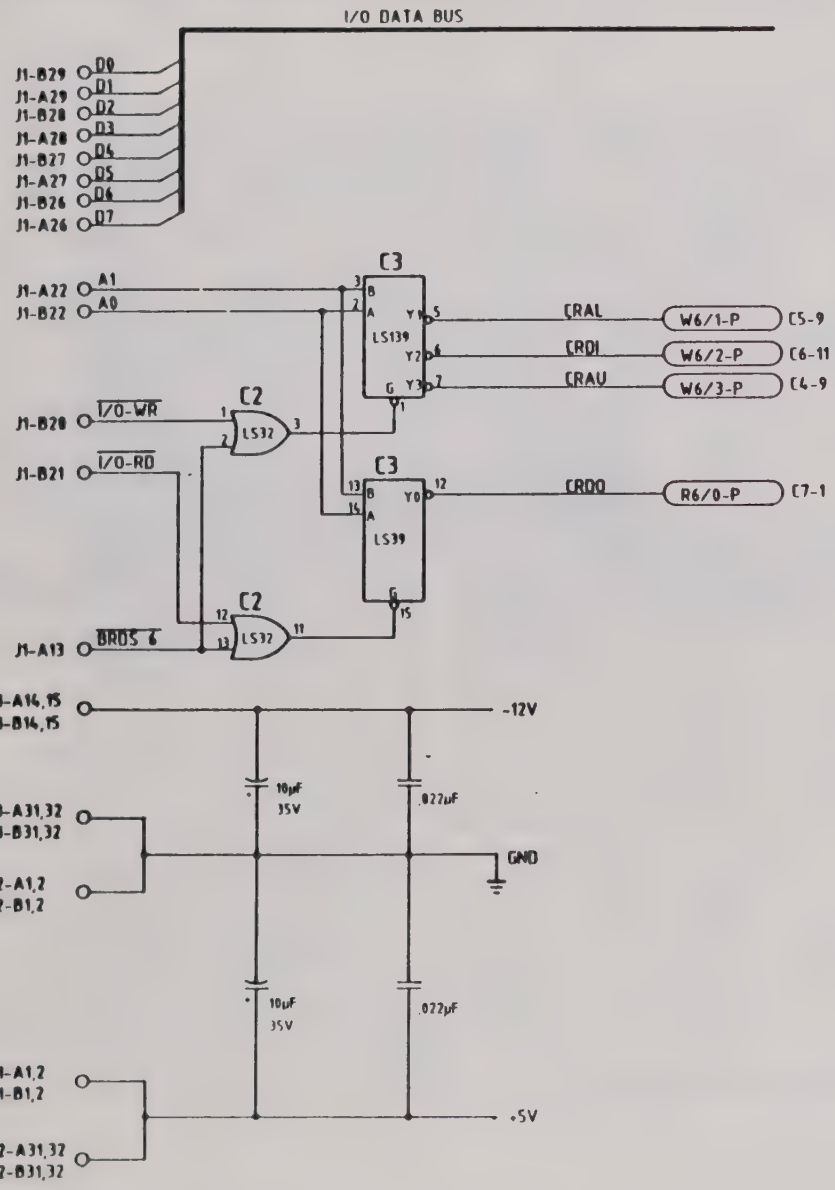
REVISIONS

DATE

CK

DWN 5.4.77


J1
A
B
+5V 1 +5V
+5V 2 +5V
3
4
5
6
7
8
9
10
11
12
BRDS 6 13
-12V 14 -12V
-12V 15 -12V
+12V 16 +12V
+12V 17 +12V
C7=MRKLD 18 C6=CACKN
C5=CRDY 19 C4=CHAR RD
C3=ACKN 20 C2=I/O-WR
C1=DATA RDY 21 C0=I/O-RD
A 1 22 A 0
A 3 23 A 2
A 5 24 A 4
A 7 25 A 6
D 7 26 D 6
D 5 27 D 4
D 3 28 D 2
D 1 29 D 0
30
GND 31 GND
GND 32 GND
J2
A
B
GND 1 GND
GND 2 GND
3
4
Ø CHAR 5
6
HT 7
8
9
HOR SYNC 10
11
12
VERT SYNC 13
14
15
16 BLANK
EVT 17
EHT 18
CHAR 19
20
21
22
23
24
25
26
27
28
29
30
+5V 31 +5V
+5V 32 +5V
DOLCH
LOGIC INSTRUMENTS
CODE
ERN
DATE
REVISIONS
NAME
DATE
CHECK
DRAWN
CHARACTER BOARD
PART NUMBER
5 4851 - 07
SHEET
1/1



NOTES:
1. JUMPERS SHOWN FOR LAM 4850 A
2. DOTTED JUMPERS TO BE USED FOR LAM 1650, 3250,4850 REFER TO S 4850-04

E	509	4 WPS				
D	434	8 10 81				
C		8 9 81	DATE			
CODE	ERN	REVISIONS	DATE	NAME		
				CHECK		
				DRAWN	8 9 81	MCC

DOLCH LOGIC INSTRUMENTS

CHARACTER BOARD

PART NUMBER	SHEET
S 4851-07 SCH	1/2

POS	ITEM	DLI - PART - NO	QT
	LS 00		2
	LS 02		1
	LS 04		2
	LS 10 (nur Texas IC's verwenden)		2
	LS 30		1
	LS 74		4
	LS 86		1
	LS 123		3
	LS 151		1
	LS 161 / LS 163		3
	LS 164		1
	LS 367		1
	LS 390 (nur Texas IC's verwenden)		1
	S 04		1
	S 00		1
	S 04		1
	S 51		1
	S 74		3
	S 86		1
	S 196		1
	93 S 16 / S 163		1
C			
	7489		1
	4520		1
	4028		1
* CR1	1N 4148		1
Y1	Quartz 42,2 MHz		1

* auf der Platine noch nicht vorgesehen

REVISIONS	CODE	ERN	DATE	NAME
M		4 2 V	23.4.81	
L		2 F 7	15.5.81	
K		2 A 5	26.8.81	
J		1 B 9	25.1.82	

CHECK
DRAWN 13.4.81 Schmidt

DOLCH LOGIC INSTRUMENTS

PART LIST
COUNTER BOARD

PART NUMBER 5 4851 - 08

SHEET 1/2

POS	ITEM	DLI - PART - NO	Q.
R1,2	200Ω		-
R3,6,9, 11,17	220Ω		5
R5,10 12,16	270Ω		4
R4	100Ω		1
* R22	330Ω		-
R18,19 20,21	3k3		4
R7,8	4k7		2
R13,14,15	6k8		3
C1	4p7		
C5,6 9,10	2p		4
C8	27p		
C4	39p		1
C7	390p		
C3	2,2n		1
C2	10n		1
$\frac{1}{T}$	22n		-
Q	10µF/35V		5
	Sockel 14p.		2
	Sockel 16p.		-
	Stiftleiste (gerade) 2p.		2
	Jumper 2p.		

* auf der Platine noch nicht vorgesehen

REVISIONS			
CODE	ERN	DATE	NAME
A	199	26.6.82	Echardt
B	245	6.9.82	
C	287	15.11.82	
D	299	12.12.82	

CHECK
DRAWN 12.12.81

DOLCH LOGIC INSTRUMENTS

PART LIST
COUNTER BOARD

PART NUMBER	SHEET
5 4851 - 08	2

REVISIONS		
CODE	ECN	DATE
1	459	25.6.82
2	287	25.4.83
4	454	25.4.83

	NAME	DATE
DRAWN		13.12.82
CHECK		

DOLCH
LOGIC INSTRUMENTS

ASS'Y DRAWING
COUNTER BOARD

PART NUMBER
S 4851-08 A

SHEET

J1

A		B
+5V	1	+5V
+5V	2	+5V
VIDEO	3	VIDEO
	4	
VT	5	VT
HT (MONITOR)	6	HT (MONITOR)
VIDEO	7	VIDEO
VIDEO	8	VIDEO
+12V (MONITOR)	9	+12 V (MONITOR)
+12V (MONITOR)	10	+12 V (MONITOR)
VT	11	VT
	12	
BRDS 6	13	N/C
-12V	14	-12V
-12V	15	-12V
+12V	16	+12V
+12V	17	+12V
C7=MRKLD	18	C6=CACKN
C5=CRDY	19	C4=CHAR RD
C3=ACKN	20	C2=I/O-WR
C1=DATA RDY	21	C0=I/O-RD
A 1	22	A 0
A 3	23	A 2
A 5	24	A 4
A 7	25	A 6
D 7	26	D 6
D 5	27	D 4
D 3	28	D 2
D 1	29	D 0
	30	
GND	31	GND
GND	32	GND

J2

A		B
GND	1	GND
GND	2	GND
	3	
TS 0	4	
TS 1	5	
TS 2	6	
	7	
Ø CHAR	8	
HT	9	
HOR SYNC	10	
TDU	11	
TDL	12	
VERT SYNC	13	
SET	14	
	15	
BLANK	16	
EVT	17	
EHT	18	
CHAR	19	
TMG	20	
	21	
TRIG MRK	22	
	23	
CURSOR	24	
	25	
	26	
	27	
	28	
	29	
Ø TMG	30	
+5V	31	+5V
+5V	32	+5V

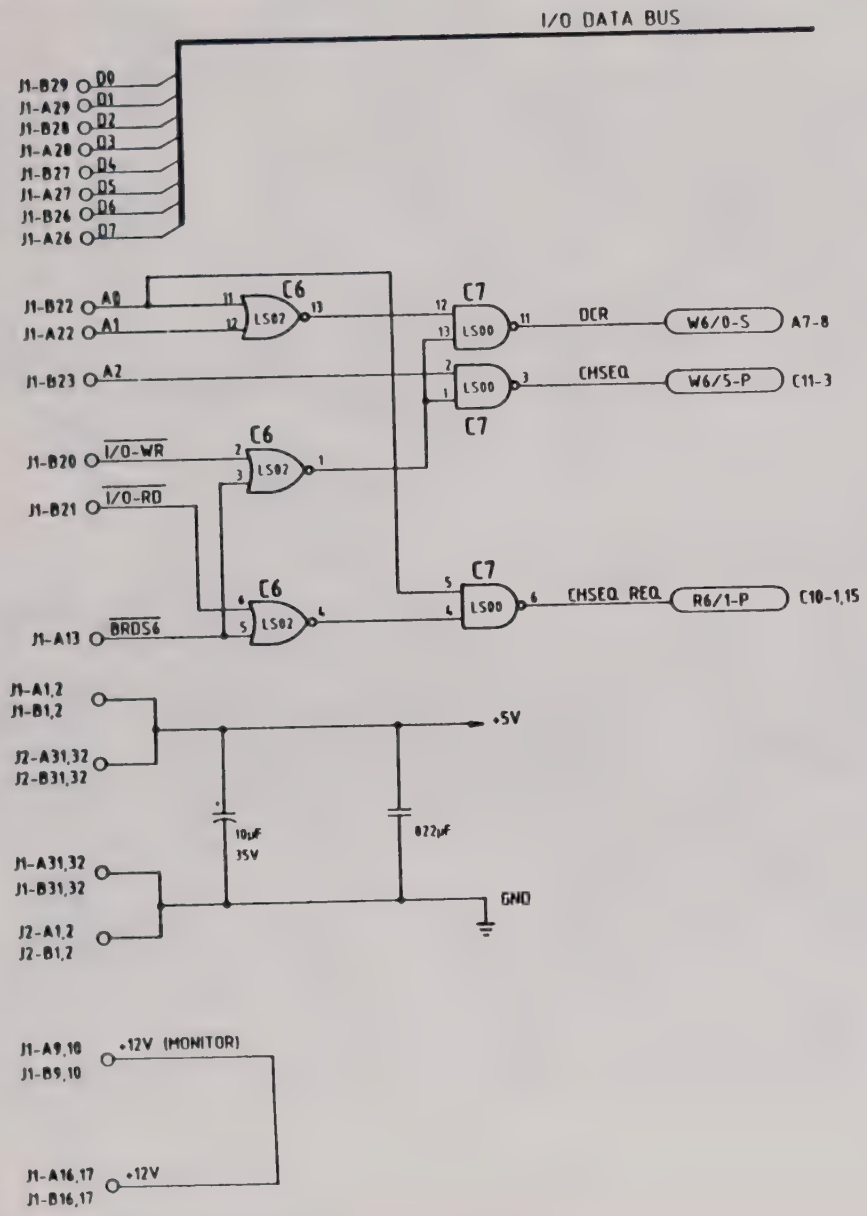
DOLCH LOGIC INSTRUMENTS

RASTER COUNTER BOARD

CODE	ERN	DATE	NAME
	REVISIONS	DATE	
CHECK			
DRAWN	21.12.81		

PART NUMBER 5 4851 - 08

SHEET 1/1



NOTES
1. JUMPERS J1,J2 SHOWN FOR LAM 4850 A
2. FOR OPERATION WITHIN LAM 1650, 3250, 4850 REFERENCE: S 4850-03

REVISIONS			
CODE	ERN	DATE	NAME
G	118	8 9 81	
H	146	14 12 81	
J	239	25 6 82	
K	245	20 9 82	
L	287	15 10 83	
M	294	29 11 83	

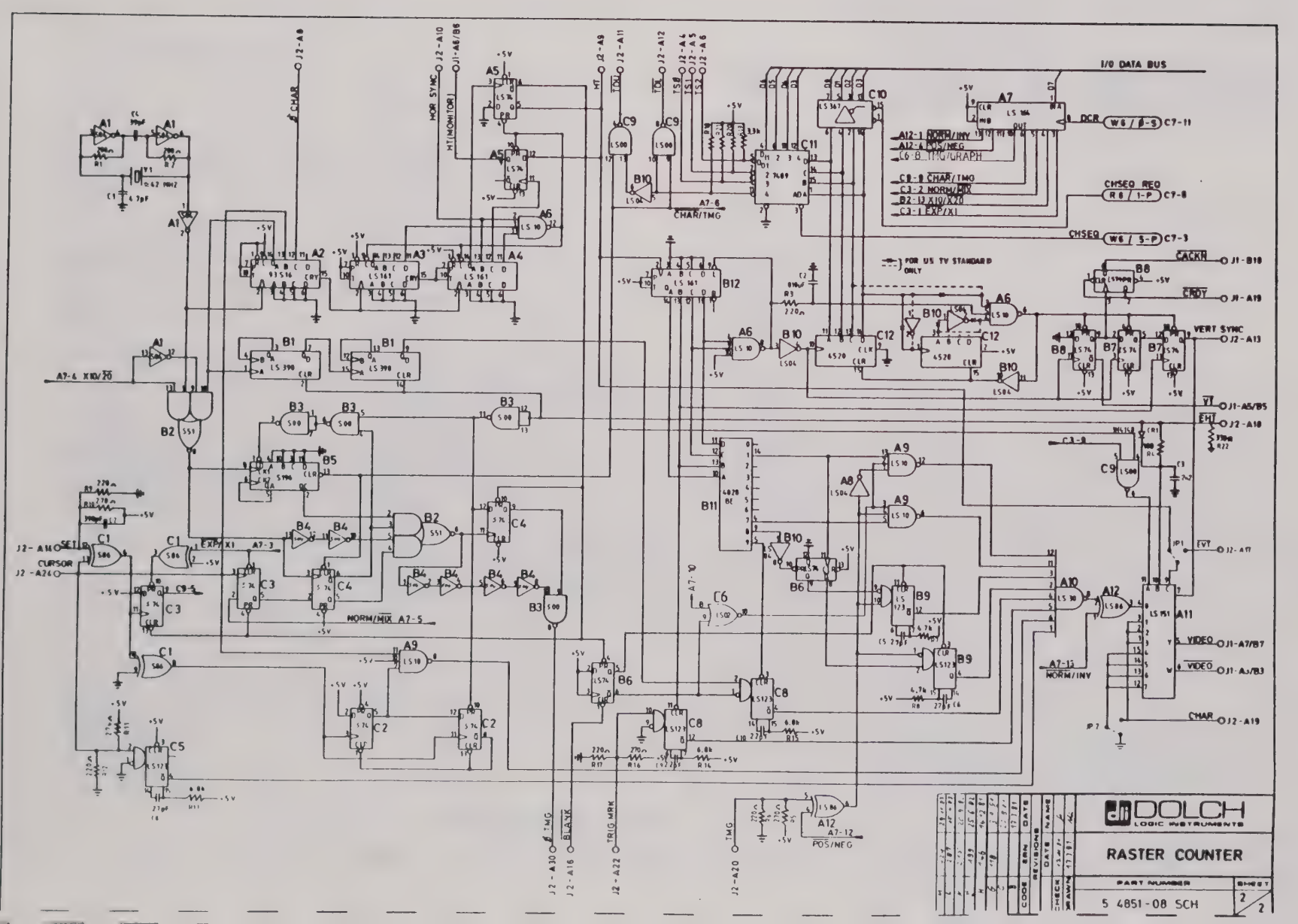
CHECK
DRAWN 8 9 81

DOLCH LOGIC INSTRUMENTS

RASTER COUNTER

PART NUMBER: S 4851-08 SCH

SHEET: 1/2


I/O DATA BUS
CHAR
HOR SYNC
HT(MONITOR)
HT
TOV
CHAR/TMG
DCR
W6 / R-S
CHSEQ REQ
R6 / 1-P
CHSEQ
W6 / S-P
FOR US TV STANDARD ONLY
CACKH
CRDY
VERT SYNC
VT
EHT
EVT
CURSOR
NORM/MIX A7-5
NORM/INV
VIDEO
CHAR
TMG
BLANK
TRIG MRK
POS/NEG
DOLCH
LOGIC INSTRUMENTS
RASTER COUNTER
PART NUMBER
5 4851-08 SCH
SHEET
2
2

POS	ITEM	DLI - PART - NO	QT
	LS00		1
	LS02		1
	LS04		1
	LS 10		1
	LS 32		1
	LS 112		1
	LS 138		1
	LS 139		1
	LS 174		8
	LS 367		3
	F 02		1
	S 04		2
	S 11		1
	S 37		1
	S 64		1
	S 74		
	S 86		1
	S 112		3
	F 74		3
	93S 16		9
	2115		3
R1...11	300 Ω		11
R 12	680 Ω		1
C1	4n7		1
C2	100p		1
C3...5	680p		3
≠	22n		11
Q	10µF/35V		3
	Sockel 14p.	18	
	Sockel 16p.	29	

CODE	ERN	REVISIONS	DATE	NAME

CHECK
DRAWN 2.6.82 Genkte

DOLCH
LOGIC INSTRUMENTS

PART LIST
CONTROL BOARD Rev. G

PART NUMBER	SHEET
5 4851-09	1/1

LS 367
LS 139
LS 138
LS 04
LS 32
LS 367
LS 174
LS 174
LS 174

J1

A		B
+5V	1	+5V
+5V	2	+5V
	3	
	4	
CLK ON/$\overline{\text{OFF}}$	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	
$\overline{\text{BRDS 3}}$	13	
-12V	14	-12V
-12V	15	-12V
+12V	16	+12V
+12V	17	+12V
C7=$\overline{\text{MRKLD}}$	18	C6=$\overline{\text{CACKN}}$
C5=$\overline{\text{CRDY}}$	19	C4=$\overline{\text{CHAR RD}}$
C3=$\overline{\text{ACKN}}$	20	C2=$\overline{\text{I/O-WR}}$
C1=$\overline{\text{DATA RDY}}$	21	C0=$\overline{\text{I/O-RD}}$
A 1	22	A 0
A 3	23	A 2
A 5	24	A 4
A 7	25	A 6
D 7	26	D 6
D 5	27	D 4
D 3	28	D 2
D 1	29	D 0
	30	
GND	31	GND
GND	32	GND

J2

A		B
GND	1	GND
GND	2	GND
$\overline{\text{APST}}$	3	TD A 1
TDB	4	TD A 2
Ø REC B	5	
	6	$\overline{\text{RRES}}$
Ø REC A 2	7	
	8	RUN
Ø REC A 1	9	
BUFFERED RUN	10	$\overline{\text{RUN}}$
CNT 1 K B	11	CNT 1 K A 2
	12	SET
	13	CNT 1 K A 1
	14	
ILACE B	15	ILACE A 2
	16	
	17	ILACE A 1
	18	HT
	19	CHAR
$\overline{\text{TGRES}}$	20	TMG
	21	
	22	TRIG MRK
	23	
	24	CURSOR
TRIG ENB	25	
	26	16/$\overline{32}$
LATRIG	27	
	28	
	29	
	30	
+5V	31	+5V
+5V	32	+5V

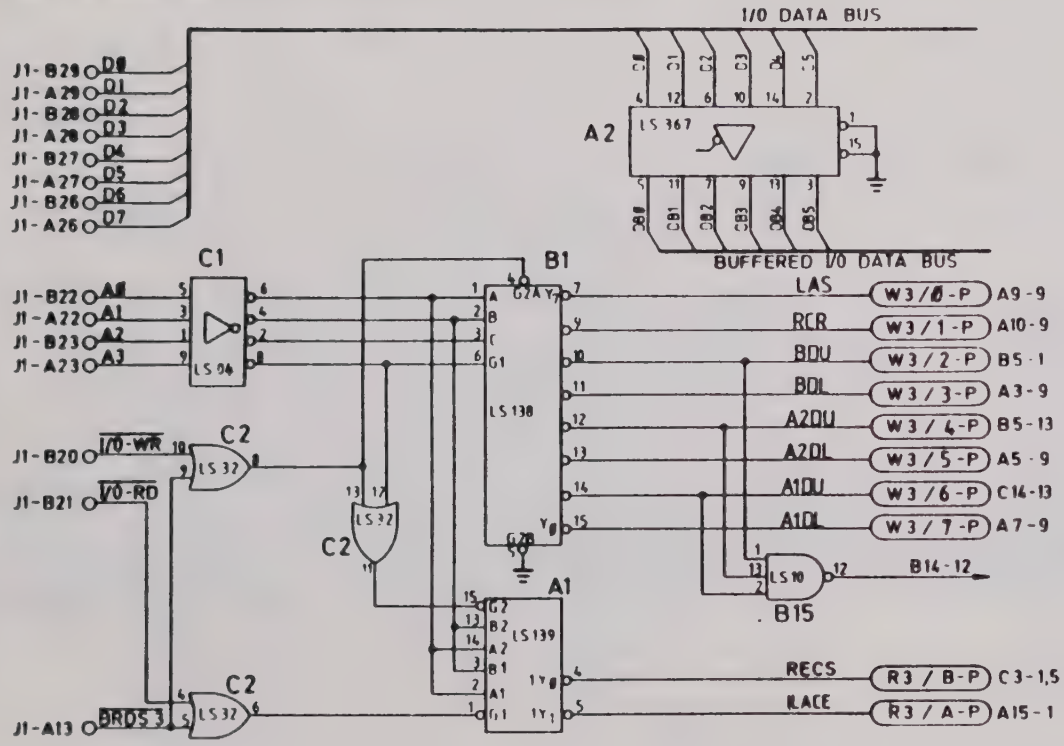
DOLCH LOGIC INSTRUMENTS

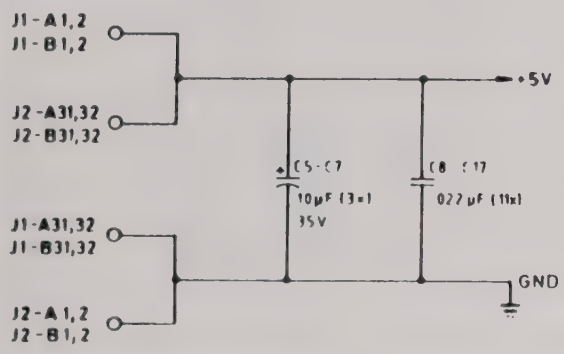
CONTROL BOARD

CODE	ERN	DATE	NAME
	REVISIONS	DATE	
	CHECK		
	DRAWN	24 12 84	Mich

PART NUMBER 5 4851 - 09

SHEET 1/1





CODE	EAN	DATE	NAME
G	245	8.8.82	
F	199	25.6.82	
E	193	2.6.82	
C	135	12.10.81	
B		30.9.81	
A		28.4.81	

REVISIONS

DATE | NAME

CHECK

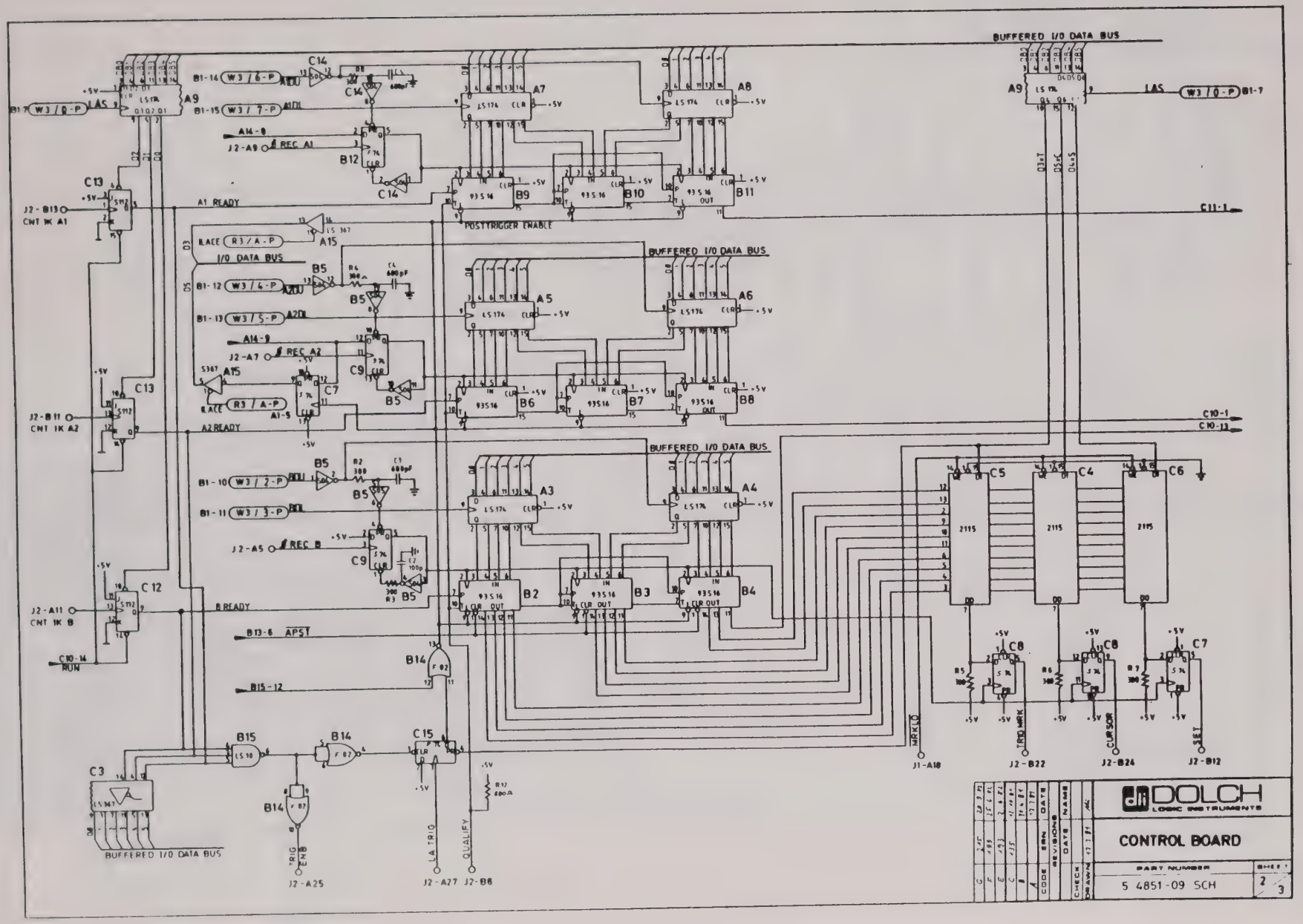
DRAWN 28.4.81

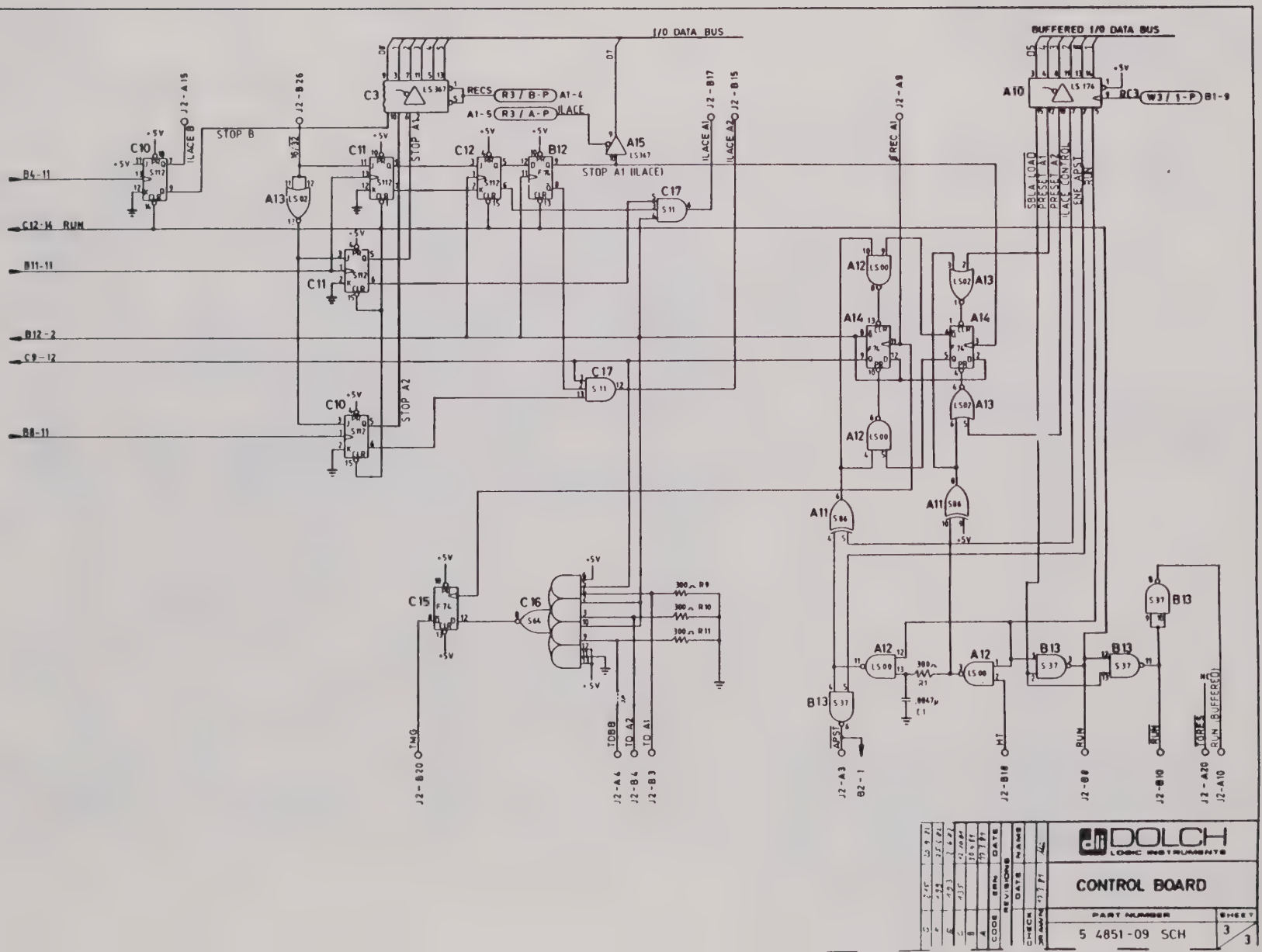
DOLCH
LOGIC INSTRUMENTS

CONTROL BOARD

PART NUMBER: 5 4851-09 SCH

SHEET: 1/3


BUFFERED I/O DATA BUS
I/O DATA BUS
A1 READY
A2 READY
B READY
POSTTRIGGER ENABLE
REC A1
REC A2
REC B
APST
RUN
CNT 1K A1
CNT 1K A2
CNT 1K B
LA TRIG
QUALIFY
TRIG ENB
CONTROL BOARD
DOLCH
LOGIC INSTRUMENTS
5 4851-09 SCH
SHEET 2 3


I/O DATA BUS
BUFFERED I/O DATA BUS
STOP B
STOP A1
STOP A2
STOP A1 (ILACE)
RECS
R3 / B-P
R3 / A-P
ILACE
RUN
SBLK LOAD
PRESET A1
PRESET A2
ILACE CONTROL
ENE ARST
SYN
B4-11
C12-14
B11-11
B12-2
C9-12
B8-11
IMG
IDBB
IO A2
IO A1
RUN (BUFFERED)
CONTROL BOARD
PART NUMBER
5 4851-09 SCH
SHEET
3
3

POS	ITEM	DLI - PART - NO	QT
	LS 00		1
	LS 32		1
	LS 138		1
	LS 139		1
	LS 174		2
	LS 367		3
	S 00		1
	S 04		1
	S 11		1
	S 151		1
	F 00		1
	F 74		1
*	93 S16		7
	2115		22
**	120 Ω		1
R 9	100 Ω		1
R 12	220 Ω		1
R 14	270 Ω		1
R1 ... R 11	330 Ω		9
CR 1	1N 4148		1
**	470 pF		1
C1	1nF		1
C2	5 - 90 pF		1
C3	68 pF		1
⊣⊢	22 n		28
C	10 µF/35 V		4
	Sockel 14P.		7
	Sockel 16 P.		37

LAM 4850 A – A4

* B 18,19,20 darf nicht ersatzweise mit S 161 bestückt werden

** von Lötseite bestücken

DOLCH LOGIC INSTRUMENTS	ASS'Y DRAWING SBLA BOARD	SHEET	
		PART NUMBER	5 4850 - 06 A4
DRAWN	2.6.81	CHECK	
		DATE	NAME

REVISIONS		
CODE	ERN	DATE
L		
M	A9X	2.6.81
N/O	36E	25.6.82

J1

A		B
+ 5 V	1	+ 5 V
+ 5 V	2	+ 5 V
	3	DI 15
	4	DI 14
	5	DI 13
	6	DI 12
	7	GND
	8	GND
	9	DI 11
	10	DI 10
	11	DI 9
	12	DI 8
SBLA *	13	
- 12 V	14	- 12 V
- 12 V	15	- 12 V
+ 12 V	16	+ 12 V
+ 12 V	17	+ 12 V
C7 = $\overline{\text{MRKLD}}$	18	C6 = $\overline{\text{CACKN}}$
C5 = $\overline{\text{CRDY}}$	19	C4 = $\overline{\text{CHAR RD}}$
C3 = $\overline{\text{ACKN}}$	20	C2 = $\overline{\text{I/O - WR}}$
C1 = DATA RDY	21	C0 = $\overline{\text{I/O - RD}}$
A 1	22	A 0
A 3	23	A 2
A 5	24	A 4
A 7	25	A 6
D 7	26	D 6
D 5	27	D 4
D 3	28	D 2
D 1	29	D 0
	30	
GND	31	GND
GND	32	GND

* { A 1 : BRDS 5
A 2 : BRDS 4
B : BRDS 1

1) CNT 4K FOR 4-K-SBLA 5 4851 - 15

2) FORMER RRES

J2

A		B
GND	1	GND
GND	2	GND
$\overline{\text{APST}}$	3	TD
	4	TS 0
TS 1	5	TS 2
	6	QUALIFY
	7	$\overline{\text{REC}}$
	8	RUN
	9	$\overline{\text{LCLK}}$
	10	$\overline{\text{RUN}}$
CNT 1K	11	$\overline{\text{TDV}}$
	12	TDL
	13	GND
	14	TL 0
ILACE	15	TL 1
	16	RESTART
	17	THEN NOT
	18	$\overline{\text{THEN}}$
	19	$\overline{\text{TGLD}}$
	20	$\overline{\text{TGRES}}$
	21	GND
	22	DI 7
	23	DI 6
	24	DI 5
	25	DI 4
	26	GND
	27	DI 3
	28	DI 2
	29	DI 1
	30	DI 0
+ 5 V	31	+ 5 V
+ 5 V	32	+ 5 V

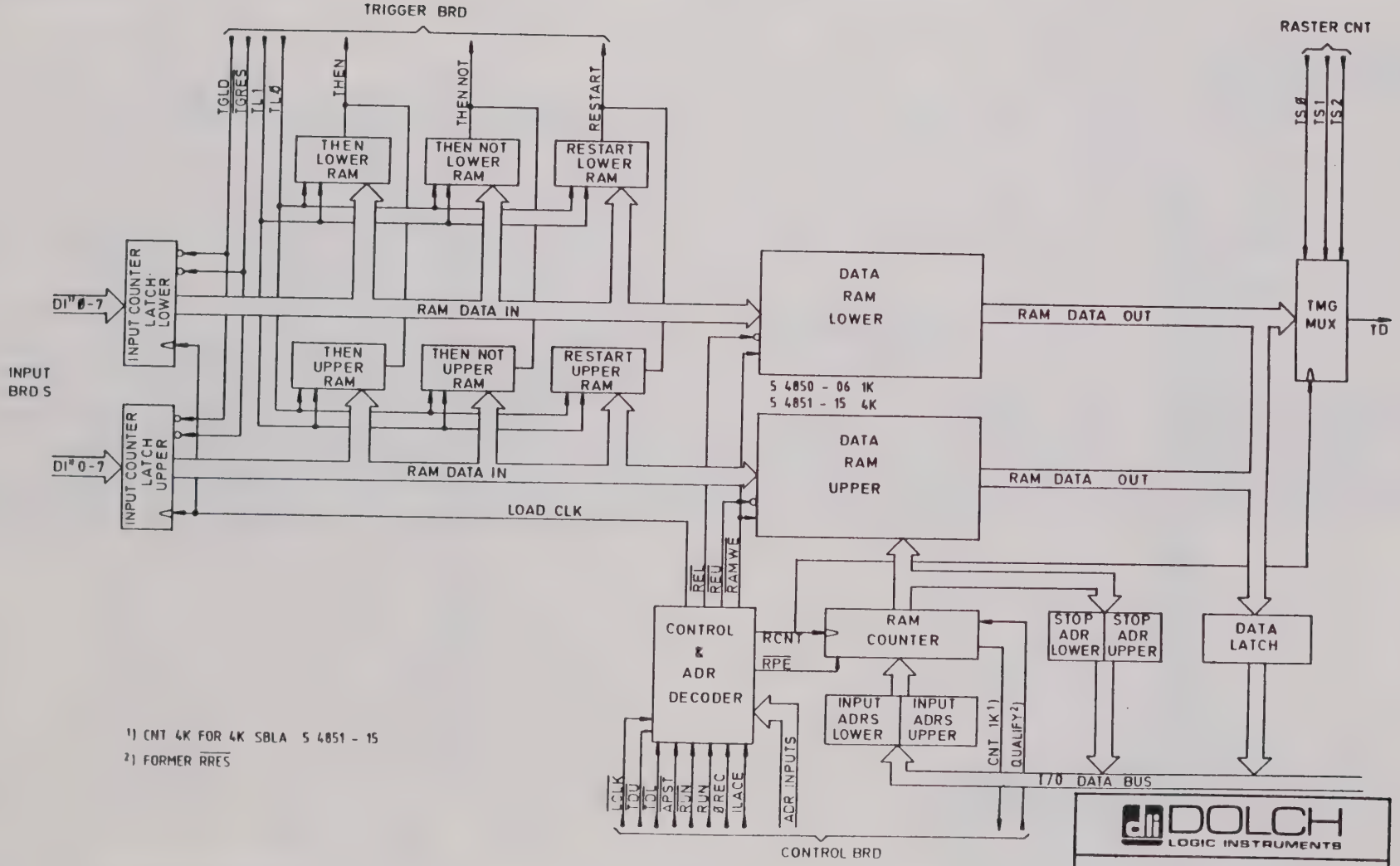
4-K-SBLA: 5 4851 - 15

CODE	ECN	DATE	NAME
	REVISIONS	DATE	
CHECK			
DRAWN			

DOLCH LOGIC INSTRUMENTS

SBLA BOARD

PART NUMBER	SHEET
5 4850 - 06	1 / 1



1) CNT 4K FOR 4K SBLA S 4851 - 15

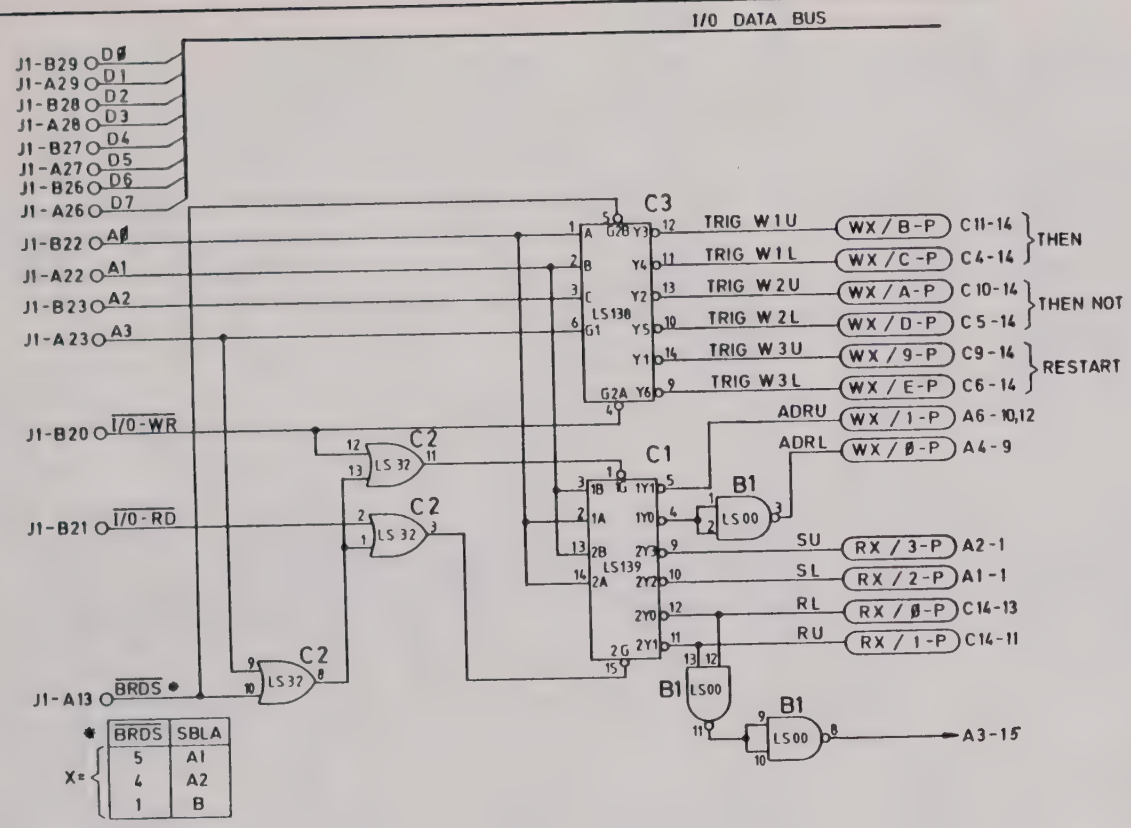
2) FORMER $\overline{RRES}$

4K SBLA : S 4851 - 15

DOLCH LOGIC INSTRUMENTS

SBLA BOARD

PART NUMBER	SHEET
S 4850 - 06	1 / 1



NOTES:
1. 5 4850-06A ASSY
   TO BE USED IN LAM 4850
   -C17-10 CONNECTED TO +5 VOLTS
2. 5 4850-06A2 ASSY
   TO BE USED IN LAM 3250
   -C17-10 CONNECTED TO A5-15
3. 5 4850-06A3 ASSY
   TO BE USED IN LAM 1650
   -C17-10 CONNECTED TO A5-15
   NOT ASSEMBLED:
4. 5 4850-06A4 ASSY
   TO BE USED IN LAM 4850A
   -C17-10 CONNECTED TO A5-15
   NOT ASSEMBLED:
   CLOCK TERMINATION R10,R13
   CAPACITOR BETWEEN C16-12 AND
   +5 VOLTS MIGHT BE CHANGED SLIGHTLY
   TO AVOID FLICKERING OF TIMING
   DIAGRAM XI IN INTERLACE.

REVISIONS	CODE	ERN	DATE	NAME
	E		6 5 80	

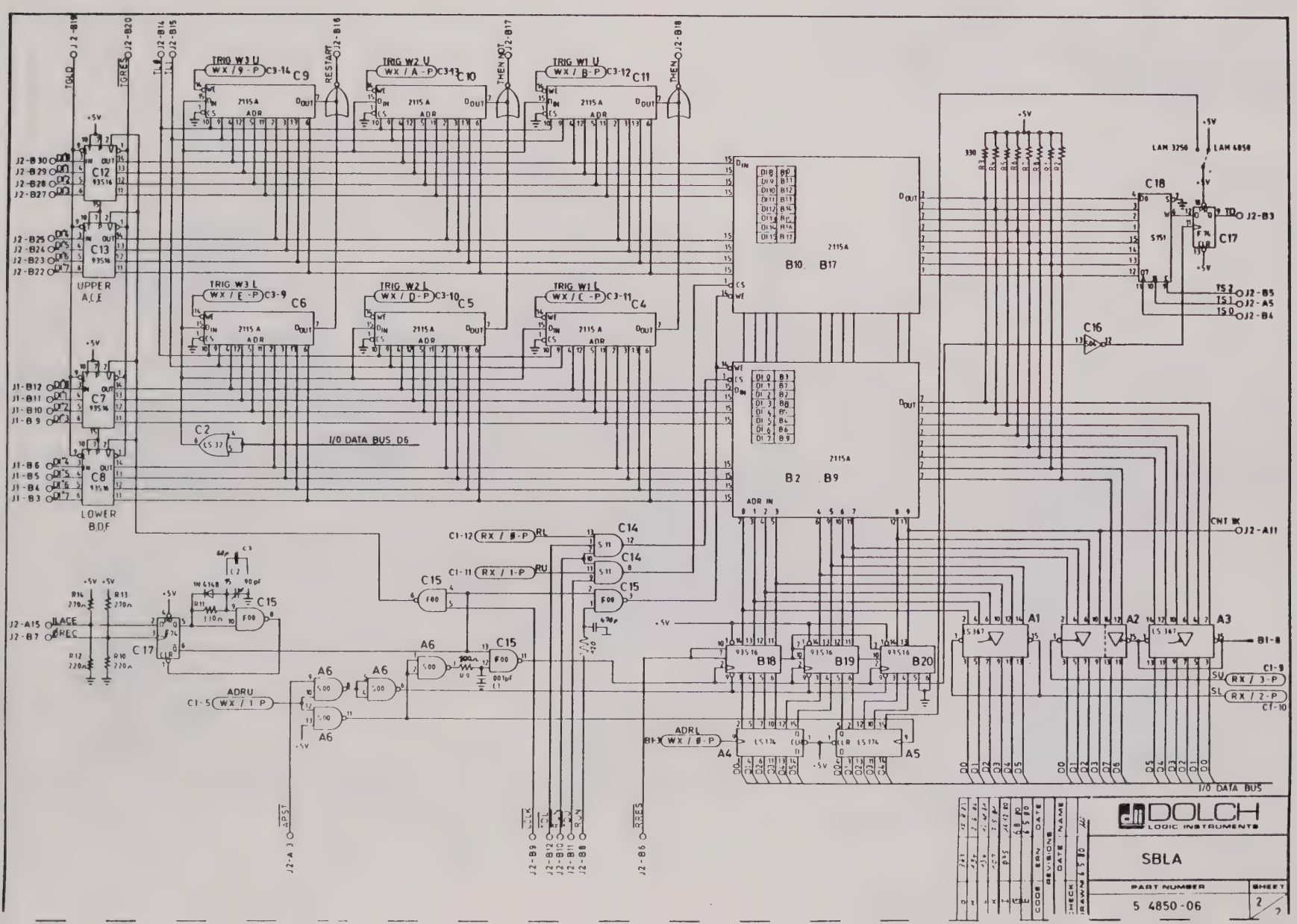
DRAWN 6 5 80
CHECK
DATE
NAME

DOLCH LOGIC INSTRUMENTS

SBLA

PART NUMBER 5 4850-06

SHEET 1/2


TRIG W3 U
WX / 9 - P
C3-14
C9
TRIG W2 U
WX / A - P
C3-13
C10
TRIG W1 U
WX / B - P
C3-12
C11
RESTART
TGATE
TGATE
TGATE
TGATE
TRIG W3 L
WX / E - P
C3-9
C6
TRIG W2 L
WX / D - P
C3-10
C5
TRIG W1 L
WX / C - P
C3-11
C4
2115A
ADR
D IN
D OUT
CS
WE
B10 . B17
B2 . B9
ADR IN
UPPER
A,C,E
LOWER
B,D,F
C12
C13
C7
C8
93S16
J2-B30
J2-B29
J2-B28
J2-B27
J2-B25
J2-B24
J2-B23
J2-B22
J1-B12
J1-B11
J1-B10
J1-B9
J1-B6
J1-B5
J1-B4
J1-B3
I/O DATA BUS D6
C2
LS 32
C1-12
RX / 8 - P
RL
C1-11
RX / 1 - P
RU
C14
C15
F00
S 11
ADRU
C1-5
WX / 1 P
ADRL
WX / 8 - P
A6
A4
A5
LS 174
LS 367
A1
A2
A3
B18
B19
B20
B1-8
CNT WR
J2-A11
SV
SL
RX / 3 - P
RX / 2 - P
C1-9
C1-10
I/O DATA BUS
C16
C17
C18
S 151
LAM 3250
LAM 6850
TS2
TS1
TS0
J2-B5
J2-A5
J2-B4
J2-B3
330
+5V
J2-A15
J2-B7
J2-A 3
J2-B9
J2-B12
J2-B10
J2-B11
J2-B8
J2-B6
DOLCH
LOGIC INSTRUMENTS
SBLA
PART NUMBER
5 4850-06
SHEET
2

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
2		LS 139	
3		LS 164	
1		LS 138	
1		LS 367	
2		LS 14	
1		8291 A / μPD 7210	
4		HI 3-201-5	
1		4050	
4		3443 / 3441	
5		8226	
2		8216	
2		1408 L8	
5		747	
1		7611 (PROM)	
1		1N4148	CR1
1		1N823	CR2
16		6K2	R7-14, R31-38
7		1K	R1-6, R54
1		10K	R48
1		820Ω	R59
4		220Ω	R44-46, R60

						DOLCH LOGIC INSTRUMENTS
		2nd	25.7.82	DATE	NAME	PART LIST
				REVISIONS		GPIB / THRESHOLD BOARD
		CODE	ERN	DATE		
				CHECK	DRAWN	PART NUMBER 5 4859-08 A4 SHEET 1/2

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
16		3K01 1% Metallfilm	R23 ··· 30, R15 ··· 22
5		1K 1% "	R39 ··· 41, R47, R49
1		2K7 1% "	R42
1		47K 1% "	R55
1		1K2 1% "	R52
2		10K 1% "	R43, R56
1		1K5 1%	R53
2		2K 1%	R57, R58
18		22uF	C9, C10, ⏚
2		4,7uF	C7, C8
4		100uF	R50, 51, R61, 62
1		100pF	C1
1		1µF/35V	C2
5		6,8µF/35V	D+
5		R-Trimmer 1K	
10		Sockel 14p.	
23		" 16p.	
1		" 40p.	
1		Präzisionssockel 16p.	
1		" 24p.	
1	5 4850-08	PC Board Rev: F	

		25.7.82	DATE	NAME	
		2:1	SRN	REVISIONS	
				DATE	
		L	CODE	CHECK	17.8.82

DOLCH LOGIC INSTRUMENTS

PART LIST
GPIB/THRESHOLD BOARD

PART NUMBER	SHEET
5 4850-08 A4	2/2

DOLCH LOGIC INSTRUMENTS			
GPIB/THRESHOLD BOARD			
PART NUMBER			SHEET
5 4850-08 A4			
DRAWN			
CHECK			
NAME	DATE		
REVISIONS			
CODE	ERN	DATE	
4	202	85.7.22	

A	J1	B
+5 V	1	+5 V
+5 V	2	+5 V
	3	
	4	
	5	THRS A+B
	6	THRS C+D
	7	THRS E+F
	8	
	9	
	10	
	11	
	12	
$\overline{\text{BRDS 2}}$	13	THRS C+D
-12V	14	-12 V
-12V	15	-12 V
+12V	16	+12 V
+12V	17	+12 V
C7=$\overline{\text{MRKLD}}$	18	C6=$\overline{\text{CACKN}}$
C5=$\overline{\text{CRDY}}$	19	C4=$\overline{\text{CHAR RD}}$
C3=$\overline{\text{ACKN}}$	20	C2=$\overline{\text{I/O-WR}}$
C1=DATA RDY	21	C0=$\overline{\text{I/O-RD}}$
A1	22	A0
A3	23	A2
A5	24	A4
A7	25	A6
D7	26	D6
D5	27	D4
D3	28	D2
D1	29	D0
POT 2	30	POT 1
GND	31	GND
GND	32	GND

A	J2	B
GND	1	GND
GND	2	GND
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	13	
	14	
	15	
	16	
	17	
	18	
	19	
	20	
	21	
	22	
	23	
	24	
	25	
	26	
	27	
	28	
	29	
	30	
GPIB INT	31	+5 V
+5 V	32	+5 V

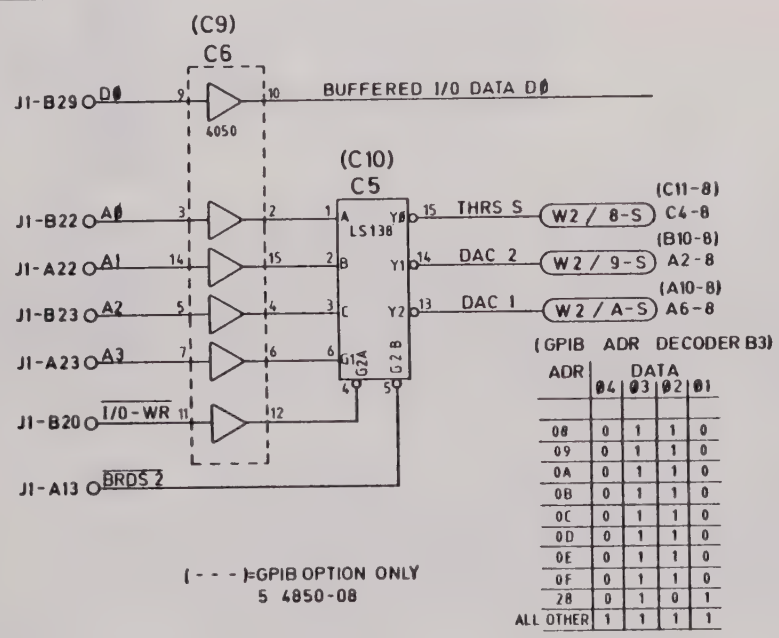
DOLCH LOGIC INSTRUMENTS

GPIB/THRESHOLD BOARD

CODE	ERN	DATE	NAME
		DATE	CHECK
		REVISIONS	DRAWN

PART NUMBER 5 4850 - 08

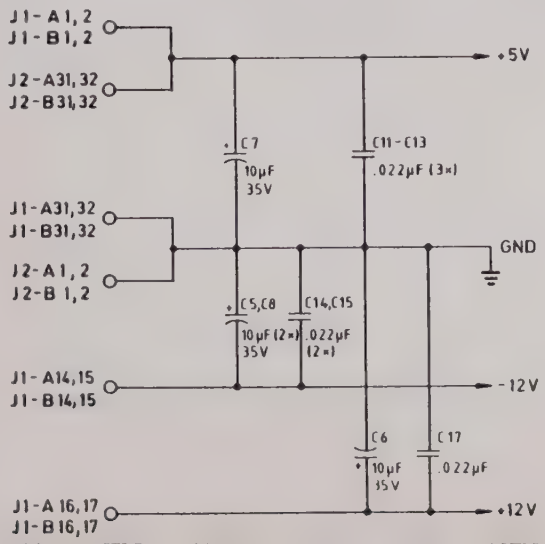
SHEET 1/2



(GPIB ADR DECODER B3)

ADR	DATA Ø4	Ø3	Ø2	Ø1
08	0	1	1	0
09	0	1	1	0
0A	0	1	1	0
0B	0	1	1	0
0C	0	1	1	0
0D	0	1	1	0
0E	0	1	1	0
0F	0	1	1	0
28	0	1	0	1
ALL OTHER	1	1	1	1

(- - -)=GPIB OPTION ONLY
5 4850-08



NOTES:
1. THRESHOLD BOARD WITHOUT GPIB LAYOUT: TO 5 4850-09
2. 5 4850-08A ASSY
   TO BE USED IN LAM 4850,3250,1650 WITHOUT GPIB
3. 5 4850-08A2 ASSY
   TO BE USED IN LAM 4850,3250,1650 WITH GPIB
4. 5 4850-08A3 ASSY
   TO BE USED IN LAM 4850A WITHOUT GPIB
   ADD A RESISTOR (47k) BETWEEN VR1 (1N823) AND A13-7
5. 5 4850-08A4 ASSY
   AS ABOVE, BUT WITH GPIB

REVISIONS	CODE	ECN	DATE	NAME
	4	1771	6 5 80	
	3	1744	1.6.80	
	2	1656	4/5/80	
	1	1604	2-7-80	

CHECK
DRAWN 6 5 80 JG

DOLCH LOGIC INSTRUMENTS

GPIB / THRESHOLD BRD

PART NUMBER	SHEET
5 4850-08	1/3

J 3

	8	9	
GND	7	10	GPIB INT
	6	11	
	5	12	
	4	13	
	3	14	
	2	15	
	1	16	

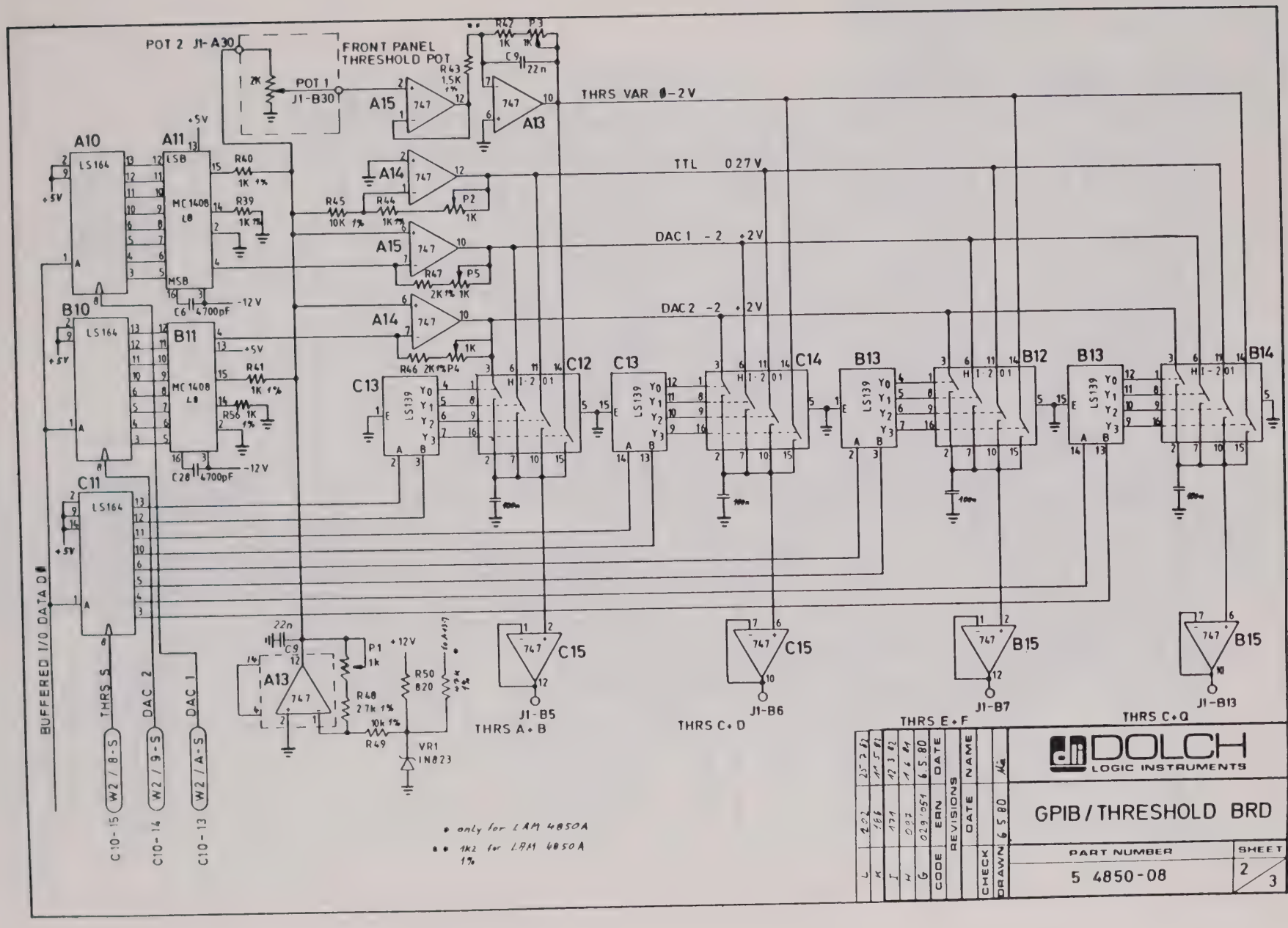
J 4

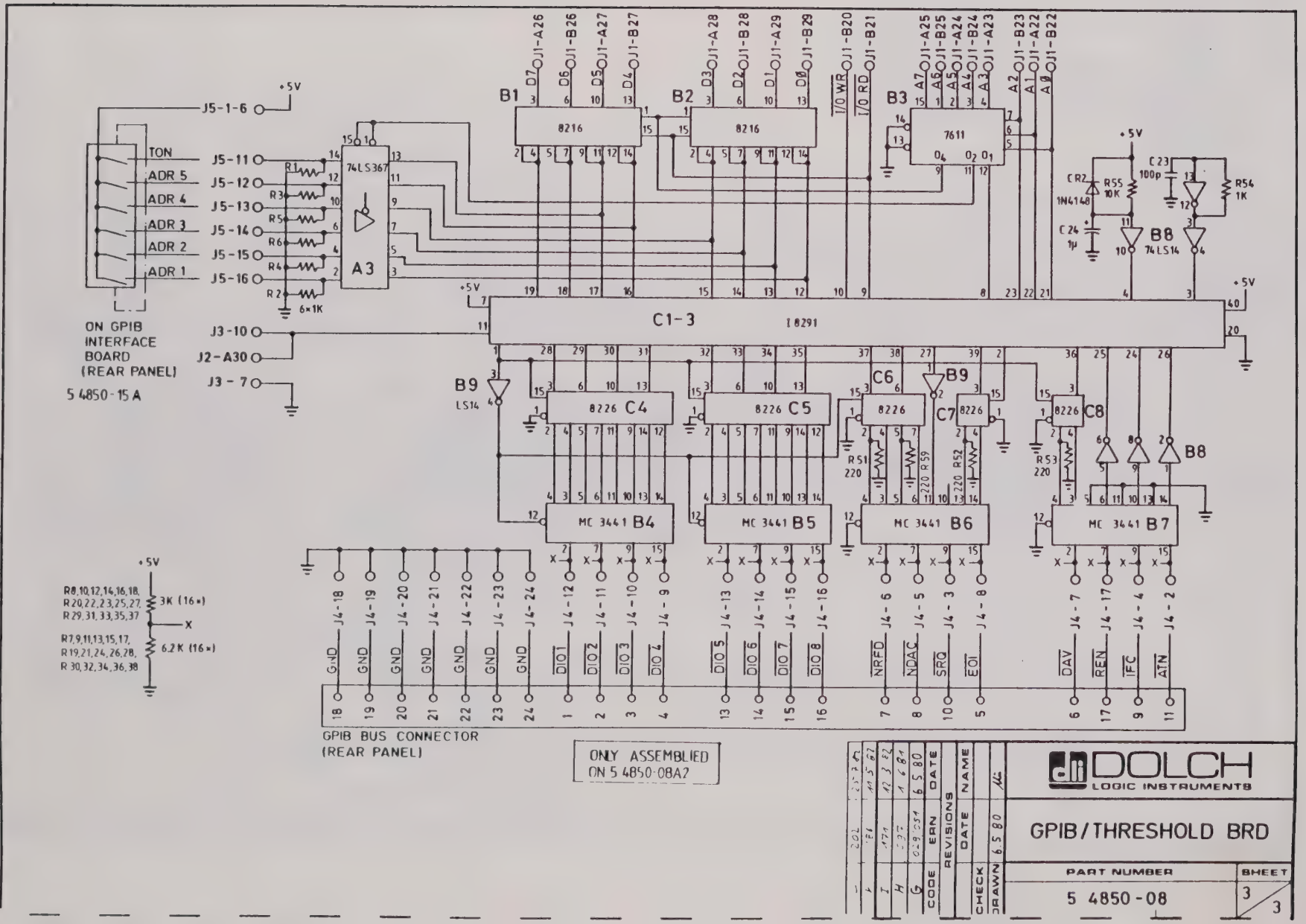
DIO 1	12	13	DIO 5
DIO 2	11	14	DIO 6
DIO 3	10	15	DIO 7
DIO 4	9	16	DIO 8
EOI	8	17	REN
DAV	7	18	GND
NRFD	6	19	GND
NDAC	5	20	GND
IFC	4	21	GND
SRQ	3	22	GND
ATN	2	23	GND
	1	24	GND

J 5

	8	9	
	7	10	
+5V	6	11	TON
+5V	5	12	ADR 5
+5V	4	13	ADR 4
+5V	3	14	ADR 3
+5V	2	15	ADR 2
+5V	1	16	ADR 1

			DATE	NAME		DOLCH LOGIC INSTRUMENTS	
		ERN	REVISIONS	DATE		GPIB/THRESHOLD BOARD	
		CODE			CHECK DRAWN	PART NUMBER	SHEET
						5 4850 - 08	2/2


POT 2 J1-A30
FRONT PANEL THRESHOLD POT
POT 1 J1-B30
2K
A15
747
R47 1K
P3 1K
C9 22n
R43 1.5K 1%
A13
THRS VAR 0-2V
A10
A11
LS164
MC1408 L8
LSB
MSB
R40 1K 1%
R39 1K 1%
+5V
A14
R45 10K 1%
R44 1K 1%
P2 1K
TTL 0 2.7V
A15
R47 2K 1%
P5 1K
DAC 1 -2 +2V
A14
R46 2K 1%
P4 1K
DAC 2 -2 +2V
C6 4700pF -12V
B10
B11
R41 1K 1%
R56 1K 1%
C28 4700pF -12V
C12
C13
LS139
B12
B13
B14
C11
BUFFERED I/O DATA D0
THRS S
DAC 2
DAC 1
W2/8-S
W2/9-S
W2/A-S
C10-15
C10-14
C10-13
22n C9
P1 1k
R48 27k 1%
10k 1%
R49
R50 820
VR1 IN823
+12V
C15
B15
J1-B5
THRS A+B
J1-B6
THRS C+D
J1-B7
THRS E+F
J1-B13
THRS C+Q
* only for LAM 4850A
** 1k2 for LAM 4850A 1%
DOLCH
LOGIC INSTRUMENTS
GPIB/THRESHOLD BRD
PART NUMBER
5 4850-08
SHEET
2/3
REVISIONS
DATE
NAME
CHECK
DRAWN
CODE
ERN
DATE



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1	1201	11 5 82	
F	1177	12 3 82	
H	1237	1 6 84	
G	629 551	6 5 80	

REVISIONS

DATE 6 5 80 CHECK

DRAWN 6 5 80

DOLCH LOGIC INSTRUMENTS

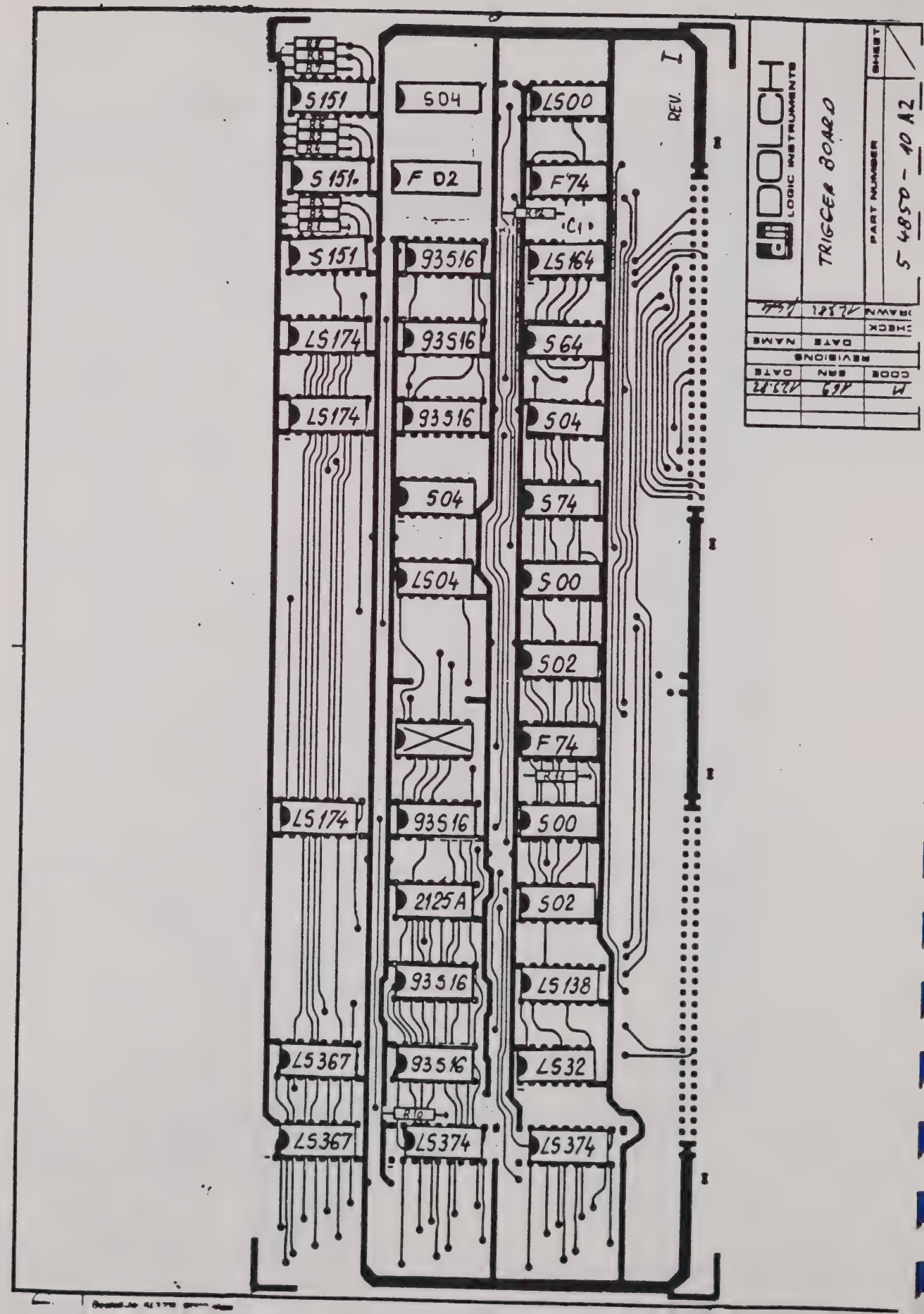
GPIB/THRESHOLD BRD

PART NUMBER 5 4850-08

SHEET 3/3

QTY	DLI PART NO.	DESCRIPTION	DESIGNATION
1		LS 04	
1		LS 32	
1		LS 138	
1		LS 164	
3		LS 174	
2		LS 367	
2		LS 374	
2		S 00	
2		S 02	
3		S 04	
1		S 64	
1		S 74	
3		S 151	
1		2725-A/2115	
1		LS 00	
6		93 S 16	
1		F 02	
2		F 74	
1		1K2	R10
11		330 Ω	R1 ... 9, R11, R12
1		680p	C1
3		10µF/35V	
10		22u	
16		Sockel 14p.	
16		Sockel 16p.	
2		Sockel 20p.	

		DATE	NAME		DOLCH LOGIC INSTRUMENTS
	AK2	DRN	REVISIONS	DATE	PART LIST
	H	CODE		CHECK	TRIGGER BOARD
				DRAWN	PART NUMBER / SHEET
					5 4850 - 10 A2 / 1/1


S151
S151
S151
LS174
LS174
LS174
LS367
LS367
S04
F02
93S16
93S16
93S16
S04
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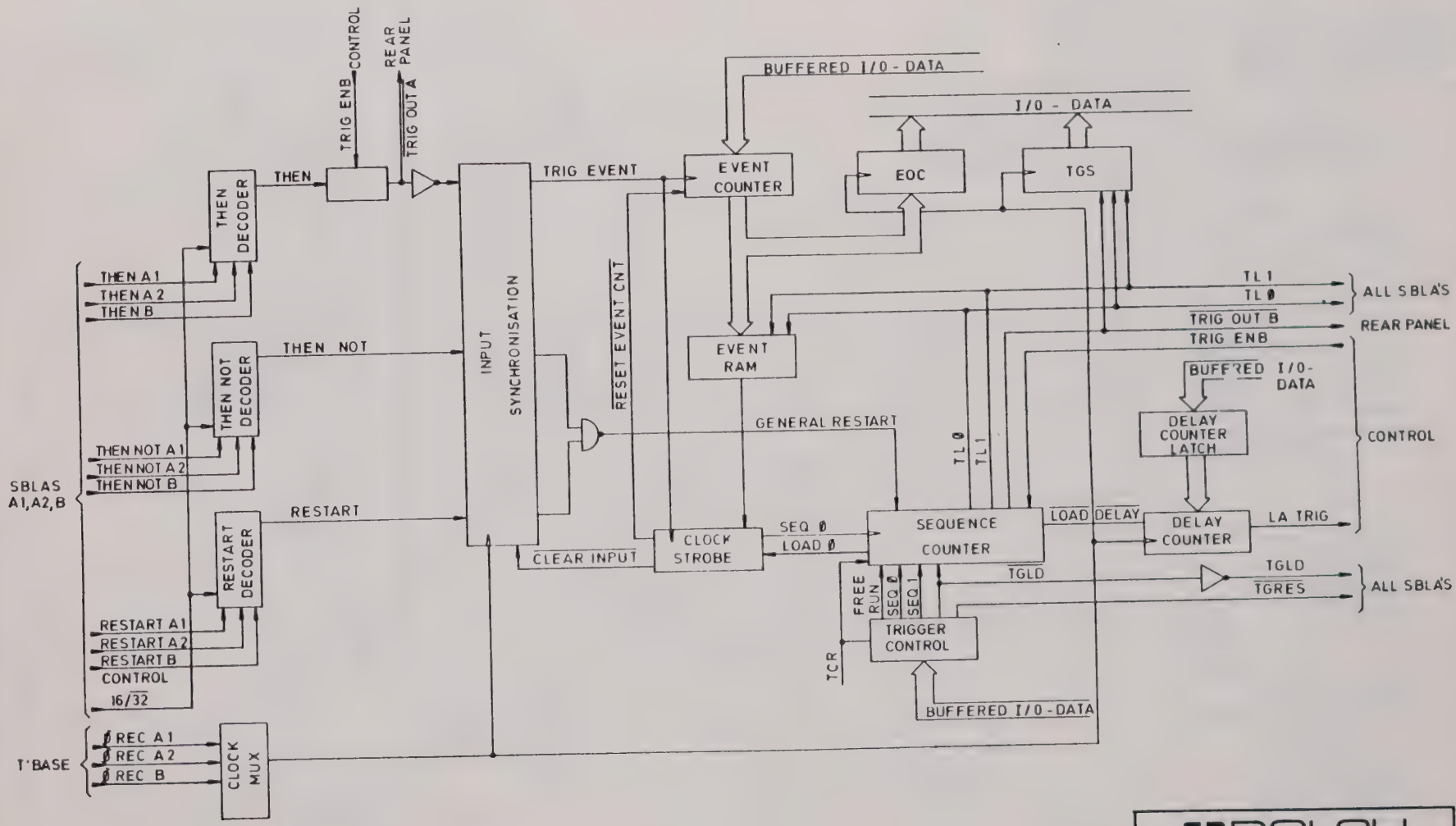
2125A
93S16
93S16
LS374
LS00
F74
C1
LS164
S64
S04
S74
S00
S02
F74
S00
S02
LS138
LS32
LS374
REV. I
DOLCH
LOGIC INSTRUMENTS
TRIGGER BOARD
PART NUMBER
S 4850 - 10 A2
SHEET
DRAWN
CHECK
REVISIONS
DATE
NAME
CODE
DATE



DOLCH LOGIC INSTRUMENTS

TRIGGER BOARD

PART NUMBER	SHEET
5 4850 - 10	1 / 1

J1

A		B
+5 V	1	+5 V
+5 V	2	+5 V
	3	TRIG QUAL 1
	4	TRIG QUAL 2
	5	CLOCK ON/OFF
	6	
	7	
	8	
	9	
	10	
	11	
	12	
BRDS 2	13	
-12 V	14	-12 V
-12 V	15	-12 V
+12 V	16	+12 V
+12 V	17	+12 V
C7 = MRKLD	18	C6 = CACKN
C5 = CRDY	19	C4 = CHAR RD
C3 = ACKN	20	C2 = I/O - WR
C1 = DATA RDY	21	C0 = I/O - RD
A1	22	A0
A3	23	A2
A5	24	A4
A7	25	A6
D7	26	D6
D5	27	D4
D3	28	D2
D1	29	D0
TRIG OUT B	30	TRIG OUT A
GND	31	GND
GND	32	GND

J2

A		B
GND	1	GND
GND	2	GND
	3	
	4	
	5	REC B
	6	
	7	REC A 2
	8	RUN
REC A 1	9	LCLK
	10	RUN
	11	
	12	
	13	
	14	TL 0
	15	TL 1
	16	RESTART B
	17	THEN NOT B
	18	THEN B
	19	TGLD
	20	TGRES
	21	THEN A 1
	22	THEN A 2
	23	
	24	
	25	TRIG ENB 1
	26	16/32
	27	LA TRIG
	28	
RESTART A 1	29	RESTART A 2
THEN NOT A 1	30	THEN NOT A2
+5 V	31	+5 V
+5 V	32	+5 V

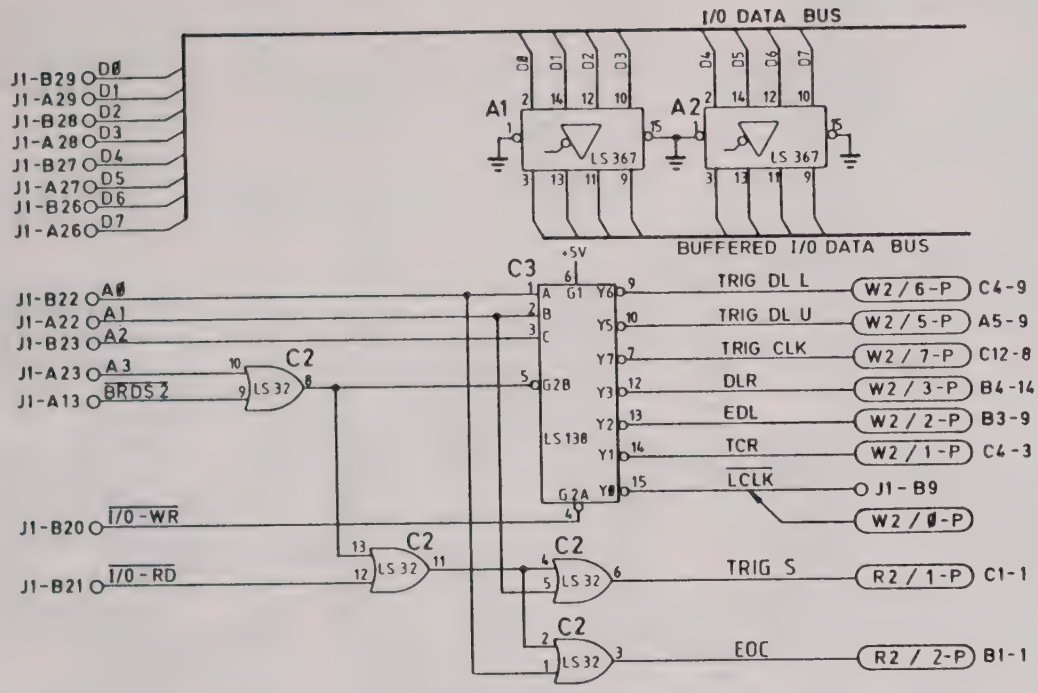
DOLCH LOGIC INSTRUMENTS

TRIGGER BOARD

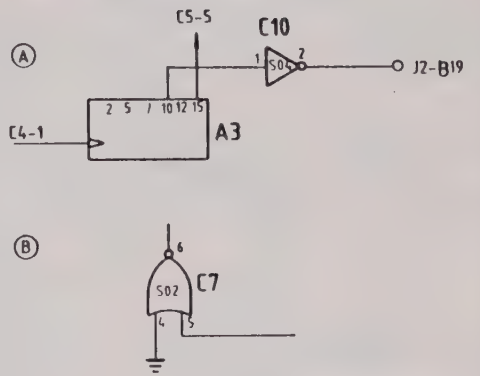
CODE	ERN	DATE	NAME
	REVISIONS	DATE	CHECK
			DRAWN

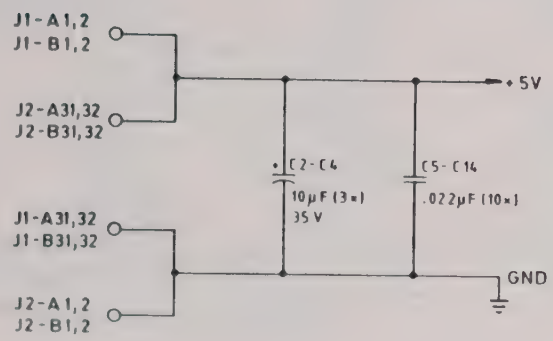
PART NUMBER: 5 4850 - 10 -

SHEET: 1/1



NOTES: 1. SHEET 3 = REVISION G ONLY
2. 5 4850-10A2 ASSY TO BE USED IN LAM 4850A ONLY WITH MODIFICATIONS





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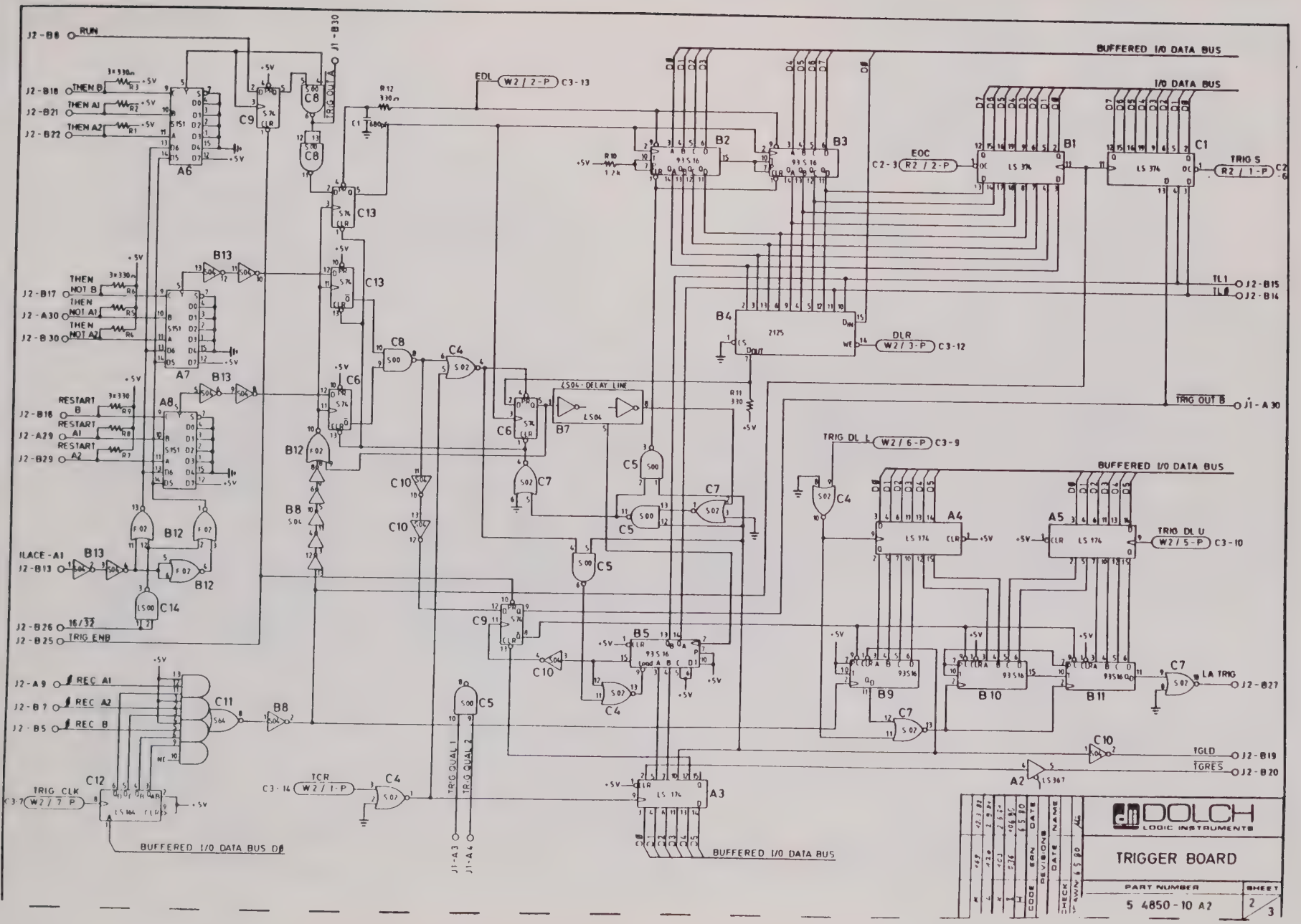
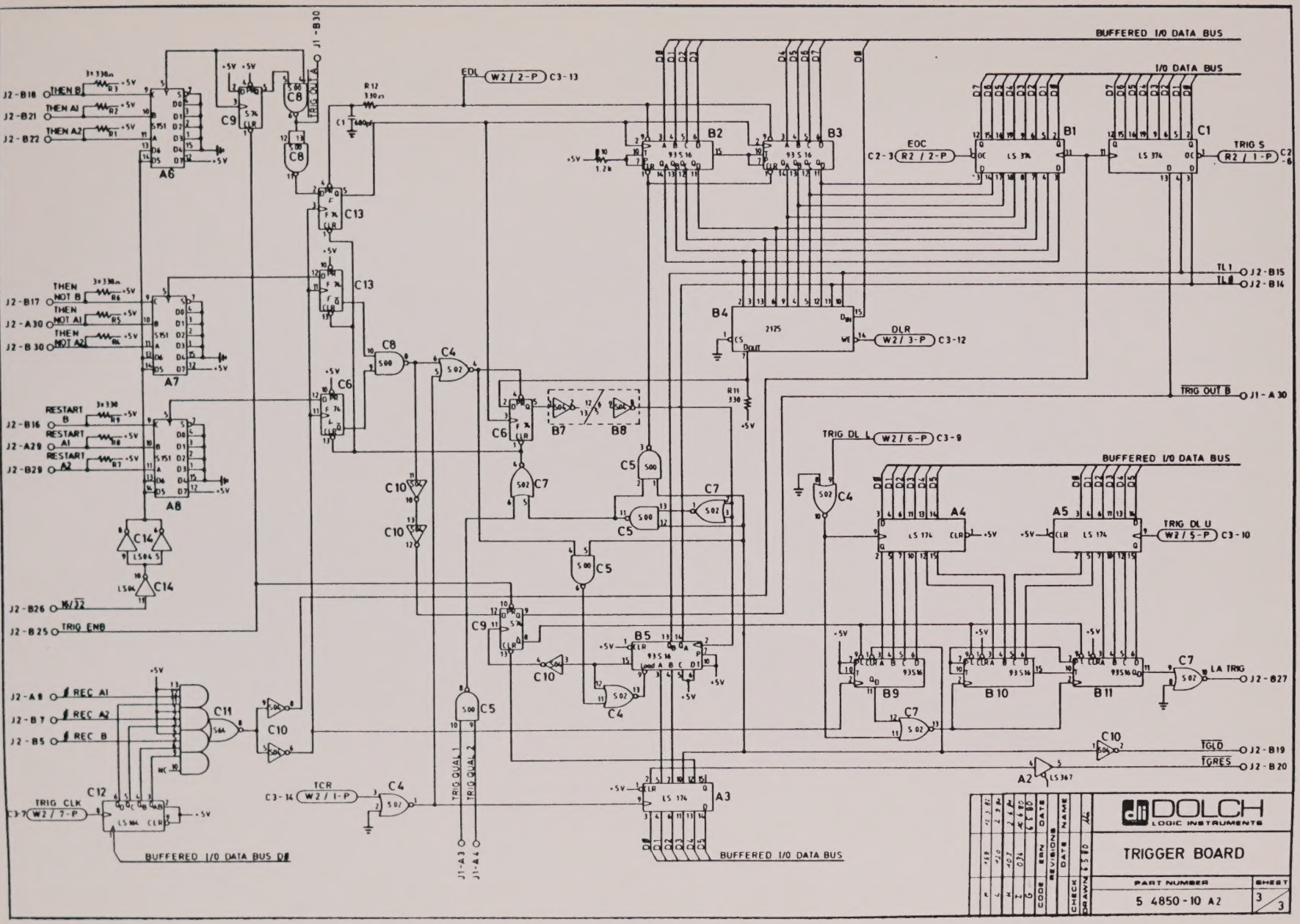

J2-B6 RUN
J1-B30
THEN B
THEN A1
THEN A2
J2-B18
J2-B21
J2-B22
A6
C9
C8
TRIG OUT A
R12 330Ω
EDL W2/2-P C3-13
C1 680pF
C13
BUFFERED I/O DATA BUS
I/O DATA BUS
B2
B3
B1
C1
EOC C2-3 R2/2-P
TRIG S R2/1-P C2-6
R10 1.7k
THEN NOT B
THEN NOT A1
THEN NOT A2
J2-B17
J2-A30
J2-B30
A7
B13
B4
2125
DLR W2/3-P C3-12
TL1 J2-B15
TL0 J2-B14
RESTART B
RESTART A1
RESTART A2
J2-B16
J2-A29
J2-B29
A8
C6
B12
B7
LS04-DELAY LINE
R11 330
TRIG OUT B J1-A30
TRIG DL L W2/6-P C3-9
C4
C5
C7
A4
A5
TRIG DL U W2/5-P C3-10
ILACE-A1
J2-B13
C14
J2-B26 16/32
J2-B25 TRIG ENB
B5
B9
B10
B11
LA TRIG J2-B27
J2-A9 REC A1
J2-B7 REC A2
J2-B5 REC B
C11
C12
TRIG CLK
C3-7 W2/7-P
TCR
C3-16 W2/1-P
TRIG QUAL 1
TRIG QUAL 2
J1-A3
J1-A4
A3
A2
TGLD J2-B19
TGRES J2-B20
BUFFERED I/O DATA BUS D0
BUFFERED I/O DATA BUS
DOLCH
LOGIC INSTRUMENTS
TRIGGER BOARD
PART NUMBER
5 4850-10 A2
SHEET
2/3


BUFFERED I/O DATA BUS
I/O DATA BUS
EOC
C2-3
R2 / 2-P
TRIG S
R2 / 1-P
C2-6
EDL
W2 / 2-P
C3-13
DLR
W2 / 3-P
C3-12
TRIG DL L
W2 / 6-P
C3-9
TRIG DL U
W2 / 5-P
C3-10
TRIG OUT B
J1-A30
TL1
J2-B15
TL0
J2-B14
THEN B
THEN A1
THEN A2
THEN NOT B
THEN NOT A1
THEN NOT A2
RESTART B
RESTART A1
RESTART A2
J2-B18
J2-B21
J2-B22
J2-B17
J2-A30
J2-B30
J2-B16
J2-A29
J2-B29
J2-B26
J2-B25
TRIG ENB
J1-B30
TRIG OUT A
REC A1
REC A2
REC B
J2-A8
J2-B7
J2-B5
TRIG CLK
W2 / 7-P
C3-7
TCR
C3-14
W2 / 1-P
TRIG QUAL 1
TRIG QUAL 2
J1-A3
J1-A4
LA TRIG
J2-B27
TGLD
J2-B19
TGRES
J2-B20
BUFFERED I/O DATA BUS D#
BUFFERED I/O DATA BUS
DOLCH
LOGIC INSTRUMENTS
TRIGGER BOARD
PART NUMBER
5 4850-10 A2
SHEET
3/3
CODE
REVISIONS
DATE
NAME
CHECK
DRAWN

MP MASTER
MA35386

DOLCH
LOGIC INSTRUMENTS

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